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THE WORLD'S LEADING PROFESSIONAL AUDIO TECHNOLOGY MAGAZINE

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Summer Hits!
Mid Year Gear Picks

Time And Place
On Location With Doctor Who

Special Supplement

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SAME GREAT SOUND

NEW IMPROVED PERFORMANCE

GEMINI II

The Gemini II gives an incredibly large detailed and intimate sound reminiscent of the classic valve microphones from decades ago, but with all of the top end you'd normally associate with the best solid state mics on the market.

The all new Gemini II now has a 10dB pad and bass cut, a brand new brushed Aluminium PSU and lower s/n ratio. If you are after something that extra bit special you really must hear this microphone. Prepare to be amazed.

"I love the warmth, fullness, presence and fat sound of the Gemini II"

STEVIE WONDER

The NEW Gemini II now features:

- 10dB Pad
- Bass Cut Switch
- New solid aluminium power supply with lower signal to noise ratio
- New 'True-Lock' locking shockmount

PORTABLE MIC BOOTH £229

'I am incredibly impressed by the seemingly contradictory combination of warmth, crispness and definition that was captured in the tracks by the sE Gemini II and sE Reflection Filter. It was a beautiful, natural sound - we didn't even use any EQ!'

DON WAS

Bob Dylan, The Rolling Stones, Willie Nelson, Bonnie Raitt

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sE

Sound Engineering

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Chris Lord-Alge
Producer/Engineer
Green Day, Sheryl Crow, All American Rejects

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- SSL E-Channel
- SSL G-Equalizer

"Very accurate. The V-Series is amazing."

Eddie Kramer
Producer/Engineer
Jimi Hendrix, Led Zeppelin, Rolling Stones

The **V-Series**

- V-Comp
- V-EQ3
- V-EQ4

"The API Collection does a great job emulating the hardware."

Andrew Scheps
Engineer/Mixing Engineer
Red Hot Chili Peppers, U2, Rolling Stones

The **API** Collection

- 550A 3-Band Equalizer
- 550B 4-Band Equalizer
- 560 10-Band Graphic Equalizer
- 2500 Stereo Compressor

WAVES

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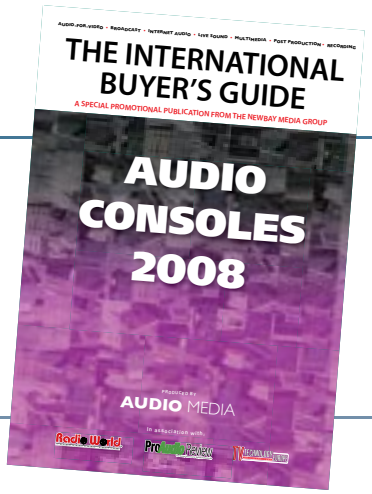
THE INTERNATIONAL BUYER'S GUIDE
A SPECIAL PROMOTIONAL PUBLICATION FROM THE NEWBAY MEDIA GROUP
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leader

The opportunity to look at audio on one of the most successful current BBC programmes – and a science fiction one at that – is one that *Audio Media* jumped at. Thus, this issue we're on location with the *Doctor Who* production sound crew, who contribute a lot to the series' bigger-budget appearance and feel. The main theme is the importance of people and teamwork to the success of a project, oddly echoed by the need for six people to fly the TARDIS when towing Earth back to its proper location; I think some ergonomic work is required, given that it's supposed to be a single-pilot vehicle.

The penultimate episode left a lot of people wondering just how you keep a secret as big as a new Doctor from the all-seeing eye of the media press, the rumour mills of fan-sites, and even the wider BBC staff. As it turns out, the regeneration was a bit unorthodox, with the Doctor becoming himself again, aided by a severed hand from a previous regeneration phase, which then helped create a second 'almost' Doctor. We had crisps, dips, and extended family to get us through the evening.

If you're not a fan, basically the Doctor (version 10.0), amidst much anticipation and rumour from the user-base, regenerates into version 10.1 (largely unchanged) and also spawns a 'lite' version (10.09 Beta), now native to an alternate universe, though development on this has ceased and there won't be anymore lite revisions – unless the developers decide otherwise, at some point in the future.

All available plug-ins (Captain Jack, Sarah Jane Smith, K9, Donna Noble, Rose Tyler, and so on) were bundled together into a value pack for a short time as interest peaked, but have now dispersed and are waiting in the wings until they can add something to the project (though are still being developed for other platforms). One of them (Donna) got a late upgrade and now completely fails to recognise version 10.1. Unfortunately, development work on Donna has ceased, which is a bit upsetting for all those who invested in her at the start.

So, even with a universe of technology and imagination at its disposal, *Doctor Who* still manages to reflect real life as most of us humans experience it.

Having said that, we've a few regenerations of our own going on at *Audio Media*. First, you may have noticed that we've switched our digital issue to the NXT Book platform. We think it's a better experience, and it brings us in line with the rest of the extensive NewBay Media library. If you're not already on the subscription list, give it a go (audiomedia.com/digital).

Also online, we've now got the regenerated versions of our console, microphone, and monitor PDF guides. These have detailed information on selected products and manufacturers, an index of relevant manufacturers, and a few informative articles to inform and entertain. And don't forget to download the 124th AES podcast review – all at audiomedia.com.

Paul Mac, Editor

AUDIOMEDIA *is a Sustaining Member of the Audio Engineering Society.*

AUDIOMEDIA

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*Within Broadcast & Production

NEW PRODUCT

MOTU 896mk3

Mark of the Unicorn has introduced the 896mk3, a cross-platform, 28-input/32-output FireWire audio interface. Features include eight XLR/TRS 'combo' analogue inputs with high-quality pre-amps, true hi-Z guitar inputs, 192kHz analogue operation, signal overload protection, 32-bit floating point DSP for digital mixing and effects processing, two banks of configurable optical I/O, and more.

Music Track
+44 (0)1767 313447
www.musictrack.co.uk
Mark of the Unicorn
+1 617 576 2760
www.motu.com

NEW PRODUCT

TL Audio

TL Audio has expanded its Ebony Series to include the Ebony A4 Summer, a 16:2, 2U summing mixer, featuring 16 balanced inputs on XLR and D-Sub with individual pan controls. Discrete Class A circuitry is deployed throughout, while balanced insert points on the master bus section enable a stereo compressor/EQ to be patched in.

TL Audio
+44 (0)1462 492090
www.tlaudio.co.uk
Music Marketing
+1 416 789 7100
www.musicmarketing.ca

PRODUCT UPDATES

Digidesign ICON D-Command ES, Pro Tools 7.4.2

Digidesign has announced availability of its newly updated ICON D-Command ES worksurface (SRP: £9,345, excluding VAT), featuring the same aesthetics as the larger ICON D-Control ES, but with a reduced footprint. The new D-Command ES has been enhanced with a darker colour scheme, as well as featuring higher contrast text and graphics to aid legibility in low lighting conditions.

Continued integration with the company's popular Pro Tools HD software is a given, with complete recall of all session parameters, routing, and plug-ins, plus dedicated central controls for EQ and dynamics plug-ins. Additional 16-channel D-Command ES Fader Modules are also available for £8,245 (excluding VAT).

Digidesign has also announced availability of Pro Tools 7.4.2, providing Mac OS X 10.5.3 (Leopard) compatibility for Pro Tools|HD, Pro Tools LE, and Pro Tools M-Powered users. "We're pleased to finally be able to offer all of our customers a fully-qualified version of Pro Tools that will allow them to take advantage of Apple's latest operating system," commented Avid Vice President and Digidesign General Manager, Dave Lebolt.

Digidesign (UK)
+44 (0)1753 655999
Digidesign (HQ)
+1 800 333 2137
www.digidesign.com

IRELAND

KMR Supplies Fundamental

Performing musician Robin Ball turned to London-based studio audio consultancy and equipment supplier KMR Audio to take care of equipment requirements for his recently opened Fundamental Studios, set in the beautiful country surroundings of Newcastle in Ireland's County Wicklow. One of the few Irish studios to boast a full-blown Euphonix System 5-MC console, other notable KMR Audio-supplied gear included Quad-Core Apple Mac Pro computers (running Digidesign Pro Tools|HD 7.4 and Apple Logic Pro 8), plus channel strips from Neve (8803) and API (7600). "KMR were great," gushed Ball. "I basically supplied an equipment wish-list, and explained what I wanted to do, and KMR just got on with it – very attentive, and if there were any problems they sorted them out straight away."

Fundamental Studios
+353 (0)87 747 3531
www.fundamentalstudios.ie
KMR Audio
+44 (0)20 8445 2446
www.kmraudio.com

NEW PRODUCT

Audio Ease All In

Audio Ease has announced All In (€960/$1,115), a Mac-only bundle comprising Altiverb, Speakerphone, Periscope, Riverrun, Deep Phase Nine, Roger, Follo, Orbit, and Snapper. Altiverb 6 and Speakerphone users can upgrade for €550/$695 and €635/$795, respectively.

www.audioease.com

NEW PRODUCT

Edirol UA-25EX

Edirol has unveiled the UA-25EX, a 24-bit/96kHz USB replacement for its UA-25 audio interface, featuring pro-grade microphone pre-amps, a newly developed analogue compressor/limiter, ground-lift functionality for studio and stage, plus a bundled Cakewalk Production Plus software suite.

www.ediroleurope.com
www.edirol.com

ESSEX

elysia Appoints Unity

elysia has appointed Unity Audio to distribute its alpha compressor and mpressor products in the UK.

www.unityaudio.co.uk

NEW PRODUCT

Vienna Symphonic Library Vienna Instruments Collection CHAMBER STRINGS II

VSI's new Vienna Instruments Collection CHAMBER STRINGS II is now available from distributors and dealers worldwide.

www.vsl.co.at

NEW PRODUCT

Rycote Windshield 10 Kit

UK microphone windshield designer/manufacturer Rycote is shipping the Windshield 10 Kit, designed to comfortably accommodate Sennheiser's MKH8000 Series microphones.

www.sennheiser.co.uk

www.reddingaudio.com

NEW PRODUCT

Roll Music Systems RMS5A7

KMR Audio has announced availability of Roll Music Systems' RMS5A7, a 500-series modular format transformer-coupled tube mic pre-amp..

www.kmraudio.com

www.rollmusic.com

NEW PRODUCTS

Nomad Factory Analog Mastering Tools, Retro Motown Music & Film

Tube emulation plug-in specialist Nomad Factory has released Analog Mastering Tools (including a high-resolution limiter and multi-band dynamics processor) and Retro Motown Music & Film bundle.

www.timespace.com

www.nomadfactory.com

NEW YORK

Sgt. Pepper's... Recorder Finds Fame

Studer has loaned an original J37 multi-track recorder used on _Sgt. Pepper's Lonely Hearts Club Band_ for a Fab Four exhibit in The Rock & Roll Hal l of Fame and Museum in NYC.

www.studer.ch

NEW PRODUCT

Waves The Jack Joseph Puig Collection

Waves has collaborated with GRAMMY award-winning producer Jack Joseph Puig (U2, Sheryl Crow, Rolling Stones) to produce The Jack Joseph Puig Collection of plug-ins based on some of the most sought-after vintage pieces of outboard gear around. Working in Puig's personal recording space within Los Angeles' legendary Ocean Way Recording Studios, Waves' R&D team painstakingly analysed and modelled each processor's attributes, replicating its sound to the point where the software is virtually indistinguishable from hardware – according to Waves.

The resulting PuigChild 660 & 670 Compressor/Limiter purportedly captures every nuance of Puig's Fairchild 670, featuring Lateral Vertical Mode for Optimal Stereo Imaging; Linked and Unlinked modes; ICON support; (up to) 24-bit/192kHz resolution; plus TDM, RTAS, VST, and AU support.

The PuigTec EQP-1A represents a recreation of Puig's handcrafted Pultec EQP-1A, featuring resonant low-shelf boost; Digidesign ICON support; up to 24-bit/96kHz resolution; mono and stereo components; plus TDM, RTAS, VST, and AU support. Finally, the midrange PuigTec MEQ-5 also includes Digidesign ICON support; up to 24-bit/96kHz resolution; mono and stereo components; plus TDM, RTAS, VST, and AU support.

For his part, Puig concluded: "There are fewer and fewer examples of these heirloom processors for artists, engineers, or producers to have access to; now, through the Waves Puig Collection, users around the world have the beautiful benefit of actually being able to use a piece of equipment that they might never have had the opportunity to work with. In a way, we are helping to preserve a piece of audio history."

Sonic Distribution

+44 (0)845 500 2500

www.sonicdistribution.com

Waves

+1 865 909 9200

www.waves.com

PRODUCT UPDATE

Lynx AES16e, AES16e-SRC

Lynx Studio Technology is shipping its AES16e and AES16e-SRC PCI Express PCI Express digital audio interfaces, the former providing 16 channels of 24-bit AES/EBU digital audio at 192kHz

sample rate in both single-wire and dual-wire AES modes, while the latter provides 16 channels of sample rate conversion.

Source Distribution

+44 (0)20 8962 5080

www.sourcedistribution.co.uk

Lynx Studio Technology

+1 949 515 8265

www.lynxstudio.com

NEW PRODUCT

Allen & Heath ZED-R16

Allen & Heath has launched its first dedicated recording mixer in over a decade in the ZED-R16, which effectively combines an analogue mixer with a FireWire audio interface and 'home studio' routing for building tracks. Features include 16 mono and two stereo inputs, dual mic pre-amp, four-band fully parametric EQ, four auxes, two stereo returns, plus 18+18 FireWire I/O and 8+8 ADAT I/O.

Allen & Heath

+44 (0)1326 372070

www.allen-heath.com

American Music & Sound

+1 800 994 4984

www.allen-heath-usa.com

PRODUCT UPDATE

API Model 1608

London-based studio audio consultancy and equipment supplier KMR Audio has announced that API's new Model 1608 console is now on permanent demonstration in their Whetstone showrooms. Stated Sales Manager Keith Malin, "We are excited about having such a beautifully engineered console here, and will be pleased to give demonstrations of its capabilities to visitors anytime by appointment. The thing simply sounds incredible!"

KMR Audio

+44 (0)20 8445 2446

www.kmraudio.com

NEW PRODUCT

DUY Silence

Barcelona-based software plug-in specialist DUY has introduced Silence, a new noise reduction tool available for Mac OS X in RTAS, VST, Audio Units (AU), and MAS formats, that simply analyses the noise on a given part of a track for a few seconds, then lets the user adjust the attack, release, and threshold values; alternatively, an Advanced mode lets users change the noise gate settings of over 1,000 frequency bands for greater control of unwanted noise.

DUY

www.duy.net

DIARY DATES 2008

Develop
29-31 July
Brighton, UK

Palmm Philippines
21 - 23 July
Manila, Philippines

PAL Showcase 2008
24 - 25 July
Toronto, Canada

AES Conference
28 - 30 July
Jeju Island, Korea

PLASA 2008
7 - 10 September
London, UK

IBC 2008
11 - 16 July
Amsterdam, The Netherlands

The Conch Awards
25 September
London, UK

The NAB Radio Show
26 - 28 September
Charlotte, NC, USA

125th AES Convention
2 - 5 October
San Francisco, CA, USA

SPAIN, AUSTRALIA
Award-winning Fairlight Upgrades Madrid

Sydney-headquartered media production systems designer/manufacturer Fairlight has sold three CC-1/Constellation mixing systems to Classic & New Madrid via its Spanish distributor, S.I. Unitecnec, who initially installed one Constellation into a demo studio at the Madrid-based facility so that engineers could undergo training. The new systems are located in Rooms 1 and 4 – primarily used for advertising projects, and Room 2, which is a Dolby-Certified 5.1 dubbing theatre handling cinema screen-destined productions. "The new Constellations replace Fairlight Prodigy 1 [MFX] systems that were originally installed in 1999," noted Technical Director Quim Rubí, adding: "This is a major upgrade for the facility, and one that allows us to considerably speed up our workflow and accommodate changes in the post-production business."

Closer to home, Fairlight's October 2007-launched Xynergi Media Production Centre has achieved one of Australia's highest accolades for design excellence by becoming one of 18 winners of an Australian International Design Award for 2008, presented at a gala dinner held at the Australian Technology Park in Sydney. Tino Fibaek, Fairlight's Chief Technical Officer, commented, "To have our efforts recognised by such a prestigious organisation is very rewarding, and a fantastic endorsement for a product that we already know is a world-beater."

Tekcare
+44 (0)1707 620090
www.tekcare.co.uk
Fairlight US
+1 626 793 3940
www.fairlightus.com

LONDON

Roary Races To Voice And Music

Audio post-production facility The Voice And Music Company has started work on the (52-episode) second series of *Roary The Racing Car*, the Chapman Entertainment-produced stop-frame animated children's television series, undertaking ADR and voice recording from the likes of comedian Peter Kay in its new facility, as well as composing new songs for the series.

The Voice And Music Company
+44 (0)20 7494 3000
www.thevoiceandmusiccompany.com

YORK

Media Mill Goes Platinum

Gaming audio production specialist Media Mill has received a triple-platinum disc from Sony Computer Entertainment for its involvement in the three-million-plus-copy-selling PlayStation 3 title *Motorstorm*. "We're really proud and pleased to have the triple-platinum disc on the wall," stated Creative Manager – and *Audio Media* contributor – Jerry Ibbotson.

Media Mill
+44 (0)1904 492500
www.mediamill.co.uk

TANGO
SmartConsole

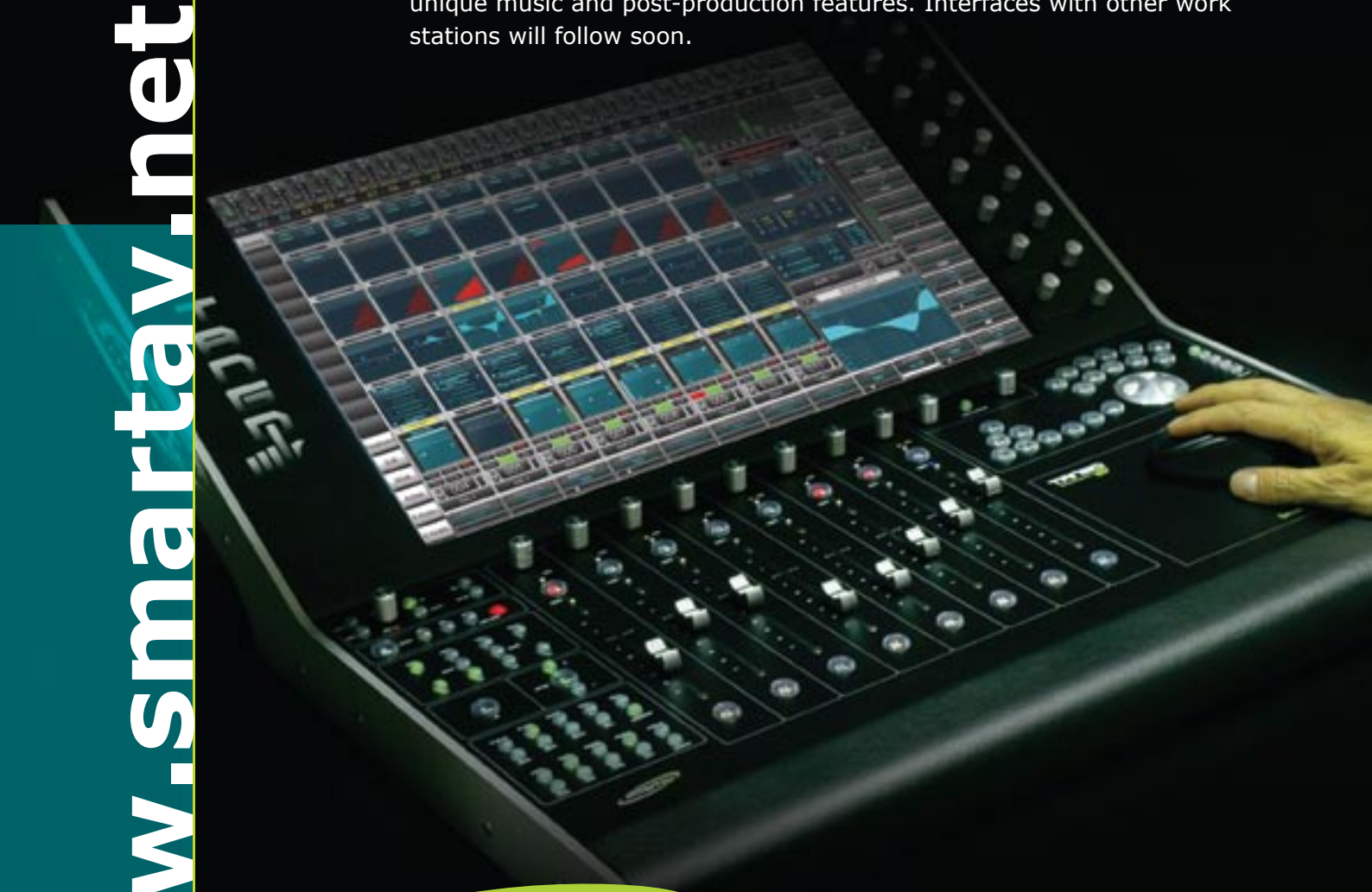
A Very **Intelligent** Controller

from the designers of the Smart Console

A combination of Features, Technology, Ergonomics, Quality and Price, that will blow your mind but not your budget. At an introductory price of £3,790, Tango is real value.

Smart AV has combined their patented ARC Technology with a huge 22" (16:9) acoustic wave touchscreen to produce the most versatile and intuitive workstation controller yet.

Super-fast Ethernet control of Logic Pro 8 and Nuendo 4. Tango offers unique music and post-production features. Interfaces with other work stations will follow soon.



www.smartav.net

smartav

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Tel: +61 2 9648 6744 Fax: +61 2 9648 6766
talktous@smartav.net

broadcast news

streaming news @ www.audiomedia.com

CHINA

Olympian Euphonix Efforts

Seven Chinese broadcasters will be using 17 Euphonix digital audio broadcast consoles for HD coverage of the Olympic Games, including Max Airs, System 5-Bs, System 5s, and System 5-Mcs (CCTV, Chongqing TV, Liaoning TV, and Yunnan TV).

www.euphonix.com

GLASGOW

Subcity Radio Gets Sonifex

The University of Glasgow's Subcity Radio has chosen a 25-frame Sonifex S2 digital I/O analogue radio broadcast mixer (with three mic/line channels, five stereo channels with EQ, and a 10-channel-wide script space) to replace its old mixer.

www.sonifex.co.uk

NEW PRODUCT

Comtrol BroadPort 550

The BroadPort 550 uPCI Card and BroadPort 550 controller (connected to the 1U, 19-inch passive rack interface via a provided SCSI cable) allows broadcast studios to control peripherals such as graphics generators, robotic tape libraries, video routers, servers, and tape recorders.

www.comtrol.co.uk

NORWICH

Megahertz Re-Equip EPIC

Megahertz Broadcast Systems have won an EU-wide tender to re-equip a suite of TV studios for HD production with the East of England Innovation Centre (formerly Anglia TV).

www.megahertz.co.uk

NEW PRODUCTS

Digigram IQOYA

French digital audio network device, soundcard, and audio processing developer Digigram has introduced IQOYA. Billed as being a comprehensive IP audio product ecosystem, three new hardware products - namely, IQOYA *CALL, a two-channel IP audio contribution codec with SIP; IQOYA *LINK, a two-channel IP audio distribution codec; and IQOYA *SERV, a multi-channel IP audio server (released in Autumn 2008) - and three new software products - namely, IQOYA V*CALL, a soft IP audio contribution codec with SIP; IQOYA V*MOTE, an IP audio remote contribution solution with SIP; and IQOYA V*CAST, an Intranet IP audio distribution software suite (released in Autumn 2008) - will be available by late-2008.

Constituting the elements of a highly-flexible and manageable IP audio infrastructure for contribution, delivery, and distribution, IQOYA products are based on FluidIP, a N/ACIP (EBU Tech 3326)-compliant IP audio codec engine developed by Digigram, providing interoperability with third-party codec devices, while adding robustness, QoS optimisation, stream integrity, and audio quality.

Digigram (HQ)
+33 (0)4 76 52 47 47
Digigram (USA)
+1 703 875 9100
www.digigram.com

NEW PRODUCT

Waves MAXXStream

Digital audio processing specialist Waves has announced availability of MAXXStream, a Windows XP-, Windows Vista-, and Windows Server 2003-compatible all-in-one software solution comprising the MaxxStream application and a its plug-in chainer, capable of holding up to eight Waves plug-ins (supporting up to 16 simultaneous encoder instances), as well as SNMP-monitoring utilities, to optimise the audio quality in streaming media formats.

Sonic Distribution
+44 (0)845 500 2500
www.sonicdistribution.com
Waves
+1 865 909 9200
www.waves.com

NEW PRODUCT

JBL Professional Control 2P

JBL Professional's Control 2P is a new five-inch, two-way powered stereo monitoring system aimed at professional broadcast and desktop production applications, featuring a headphone jack, side-mounted large volume control, internal peak limiter, and overload protection system with an LED indicator.

Sound Technology
+44 (0)1462 480000
www.soundtech.co.uk
JBL Professional
+1 818 894 8850
www.jblpro.com

RME . International Distributors

North America
USA, CANADA: Synthax Inc. , www.synthax.com

South America
CHILE: Videomedia LTDA. , www.mediaycom.cl

Europe
BULGARIA: Almar Co. Ltd. , www.almar.bg
CROATIA: Neuron , www.neuron-d.com
CZECH REPUBLIC: Disk Multimedia s.r.o. , www.disk.cz
DENMARK: Soundworks , www.soundworks.dk
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FINLAND: Carbo'n Music Oy (Ltd) , www.carbonmusic.fi
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GREECE: Logothetis Music , www.logothetismusic.gr
HUNGARY: Midisoft Studio Kft. , www.midisoft.hu
ICELAND: Tonabudin Ltd. , www.tonabudin.is
IRELAND: Future Sounds , www.futuresounds.ie
ITALY: MidiWare Srl , www.midiware.com
LITHUANIA: Midiaudio Ltd. , www.midiaudio.com
NETHERLANDS, BENELUX: AudioAG , www.synthax.nl
NORWAY: ProLyd , www.prolyd.no
POLAND: Audiostacja s.c. , www.audiostacja.pl
PORTUGAL: Audiolog, Lda , www.audiolog-lda.com
ROMANIA: A.V. Audio Sys s.r.l. , www.avaudiosys.ro
RUSSIA: 4Sonic , www.4sonic.ru
SERBIA, MONTENEGRO: Artist d.o.o. , www.artistsystems.co.yu
SLOVAK REPUBLIC: Sound Service , www.soundservice.sk
SLOVENIA: MTD , www.mtd-el.si
SPAIN: Microfusa , www.microfusa.com
SWEDEN: Fitzpatrick Import Group S.A. , www.fitzpatrick.se
SWITZERLAND: Music Network GmbH , www.musicnetwork.ch
TURKEY: BL Muzik Co. Ltd. , www.blmuzik.com
UKRAINE: Real Music Ltd. , www.realmusic.ua
UNITED KINGDOM: Synthax Audio UK Ltd. , www.synthax.co.uk

Asia and Pacific Rim
AZERBAIJAN: Promix , www.promix.az
AUSTRALIA, NEW ZEALAND: Innovative Music Australia Pty Ltd. , www.innovativemusic.com.au
CHINA: Central Music Co. , www.centrmus.com
HONG KONG: Central Music (HK) Ltd. , www.centrmus.com.hk
INDIA: Modi Digital Audio Pvt Ltd. , www.modidigital.com
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KOREA: Soundcat , www.soundcat.com
INDONESIA: M-Station , www.m-station.biz
THAILAND,KAMBODIA, MALAYSIA: KDM Trading Co Ltd , www.kdm.co.th
TAIWAN: MidiMall Inc. , www.midimall.com.tw

Middle East
ISRAEL: Music-Shop LTD , www.music-shop.co.il
UAE, EMIRATES: Thomsun Trading Est , www.thomsun.ae
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Buying Big Business

KEVIN HILTON jumps on the rumour mill when a lot of 'for sale' signs start popping up around some of the industry's big names.

The news may give hard facts that are irrefutable, but there is always room for speculation as to how the events concerned happened and what might happen next. This was very much the case with the sale of the BBC's outside broadcast, studios, and post-production departments. This was instigated after a Commercial Review concluded that the Corporation should only own businesses that exported or exploited its brand or programmes.

The 'for sale' notice went up last year and the BBC appeared to be hoping that the BBC Resources as a whole would be sold to a single buyer, but potential bidders were interested in only single divisions. In April, Satellite Information Services (SIS) was named as the new owner of BBC OBs.

Around the same time the BBC made a not so loud announcement that BBC Studios would remain within the BBC as the rump of BBC Resources. So, one sold, one retained, and one to go. Prime Focus London, part of the Indian Prime Focus group, was among those showing interest in BBC Post Production but, as with the studios, there were difficulties over staff conditions, among other issues.

Early June, with hardly anyone noticing, the broadcaster slipped out an announcement that, "… the BBC Sale Team has now confirmed that the BBC is no longer actively in discussion with a buyer for its Post Production business."

The BBC is to "complete a review into its longer term post production supply requirements." Post Production will stay within BBC Resources, which is still a wholly-owned subsidiary of the Corporation. The BBC and BBC Resources are to look into what the broadcaster needs from its creative-technical services and see how this affects any future plans.

Although BBC Resources has been operating on a free market basis since the 1990s and producers have been able to use outside facilities, there is the thought that having easy access to 'in-house' studio and post services, run by people who understand the Corporation's ethos, is a major advantage. That applies to OB trucks as well but by their nature they are an external resource; besides, SIS has promised to continue working with the BBC, so specialist knowledge and understanding will not be lost. Studios and post are different, particularly on big projects like Euro 2008 when the BBC needs a dedicated facility.

Corporate Concerns

Corporate ownership is a tricky business. If a company is bought there are fears that the new owner will make all sorts of changes. The ideal is to be owned by a concern that has the money but allows its subsidiaries to manage their own business, with the only demand being that money is made.

The prospect of that enlightened owner being bought out must be worrying. D&M Holdings, which owns Calrec Audio and Allen & Heath, its most recent acquisition, as well as a number of consumer electronics manufacturers, has entered into agreement whereby Bidco, a group of investment funds advised by equity firm Bain Capital Partners, would buy all its shares.

This would put D&M and its subsidiaries into single, private ownership. D&M's board has agreed that this would be the best move for the company and allow increased investment to move its businesses on in 'fast-paced markets'. Bain Capital has invested in a variety of big name brands, including Burger King, Toys 'R' Us and Warner Music.

Some equity firms come in and asset strip, but one D&M company is confident that the situation will not change dramatically. "The Calrec management does not expect the sale of shares in D&M Holdings to Bain Capital to affect the considerable level of support given to us by D&M, which allows us to pursue our strategies and customer relationships in the way we always have," said John Gluck, Calrec's Sales and Marketing Director. "The ownership of Calrec by D&M is as successful as both parties had hoped for, and we do not see any reason for this to change."

Cadac Conjecture

Any conjecture over how Calrec and A&H would fare under a new owner was more or less abandoned when the news came through that another well respected and long-standing British console brand, Cadac, had ceased trading, even though it was still solvent. The immediate conclusion was that someone would scoop up the niche manufacturer, maybe a competitor or a manufacturing conglomerate, but most likely a venture capital firm.

Which shows how speculation can go awry. By the end of June, Managing Director Bob Thomas was securing new financing with the assistance of Cadac's bank, and staff had returned to work. Thomas explained that four abandoned orders had brought the company to the point where the shareholders decided to cease trading, rather than trade into insolvency. "We ran out of cash over the summer," he said, "but now the situation is looking most promising."

Thomas acknowledges that a specialist manufacturer dependant on almost a single market will be vulnerable and so was frustrated that the company nearly succumbed when plans for greater diversification were in place. Cadac's analogue products are still a critical part of its output, but the company is seeing the new S Series digital desk opening up the installation market, with the first going into the Royal Exchange Theatre in Manchester. Thomas is also using experience from his days at Tascam to move into rack-mounted EQ and compression equipment.

So we may now know more about all these stories but there's still plenty to keep Rumour Control going for a while.

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Composer's Dream Fulfilled

After a six-year search for suitable premises, composer Karim Succar has finally built his dream recording facility in a new building just 10 minutes from the centre of Paris. JIM EVANS reports.

The building, which Succar describes as a 'concrete cube', was transformed into a state-of-the-art studio by UK acoustic and technical design company, White Mark. It now comprises a large control room equipped with a 32-fader Pro Tools D Control console, a Neve BCM10 analogue console, Exigy 5.1 monitoring with eight surrounds, a JVC High Definition projector, a White Mark acoustically transparent screen and a whole host of analogue outboard equipment and musical instruments. There is also a large live room with natural daylight and a lounge area. The studio furniture was custom-made by AKA Designs, and incorporates special touches such as the facility's logo carved into the desktop.

Operating under the name of KariSm Productions, the new facility gives Succar a permanent base from which to compose and produce music for television programmes, commercials and radio advertising. Succar has been composing for more than 18 years, and has created memorable music for a number of French games shows, including Big Deal and Les Amours. Among his clients are many of the biggest names in French broadcasting, including TF1, the NRJ radio group, and France 2.

"Having my own studio has been my dream for a long time," he says. "For the last few years I have been working in a much smaller, rented facility that inevitably meant compromises in terms of equipment and acoustics. When my business partner, Sevan Bolikian, and I eventually found this building in 2006, I was determined to build a studio that not only fitted my requirements, but exceeded anything that was available commercially. When we found this building my wife had just given birth to our daughter and virtually on the day we completed the studio, she gave birth to our son. It has certainly been a busy two years, but the results are well worth the effort."

Succar conducted extensive research among studio design companies and visited many other facilities, including some in the UK, before choosing White Mark for the project.

"In the end it was quite an easy decision to make. The combination of White Mark acoustics and Exigy monitoring is certainly very special."

Succar's concrete cube, which is part of a newly built mixed retail, residential, and restaurant block near Port Maillot, turned out to be a most appropriate choice, because the room's dimensions lent themselves to great acoustics.

David Bell, Managing Director of White Mark, says: "It is always a challenge to create a personal work space for a client, as there are many influences that are highly individual. Karim had strong views about what he wanted from his studio, and it was very important to him that the long years waiting for his own studio to be built were worth it. The open acoustic and natural work environment created by careful control of the reverberation characteristics and imaging are perfectly complemented by the abundant natural light, and the rooms have a very warm and yet accurate feel. We are very pleased with them, and happy that Karim chose us to create his dream facility."

Succar adds: "White Mark did such a fantastic job with the room design that the monitor system sounded perfect from the moment it was turned on. I couldn't be happier – the room acoustics and the monitoring have exceeded all my expectations."

KariSm Productions is now officially open, and Succar is already using the facility to tackle four advertising campaigns for NRJ. These include commercials for consumer electronics manufacturer Archos and Afat Voyage, the travel agency owned by Air France.

Recording With DPA At Puy du Fou

French Sound Engineer Frédéric Bourgeais has chosen the DPA 5006 surround mic kit, in conjunction with the S5c Surround Mount with integrated cables, to record a symphony orchestra on one of the world's largest stages at the Grand Parc du Puy du Fou.

The Grand Carrousel theatre was built at the Grand Parc in 2006, and boasts a 2,800m^2 stage. It stages several annual productions including Mousquetaire de Richelieu, which features a symphony by composer Nick Glennie Smith, and Symphonie de Bethléem, performed by the Prague Philharmonia, a 30-piece choir and two soloists.

Bourgeais takes up the story of how the recording came about. "We have a very good relationship with the Prague Philharmonia. When the last production of Symphonie de Bethléem finished, we decided to keep them on to record the symphony from Mousquetaire de Richelieu, using the mic setup that was in place. It was a huge challenge for us because it was the first time we'd recorded in this space." Bourgeais used the DPA S5c Surround Mount with five matched 4006-TL omni mics.

Also produced at the Grand Parc is the long-running sound and light spectacular, the Puy du Fou, which celebrates its 30th anniversary this year. Bourgeais, who has worked on the show for 26 years, recorded a special 14 June concert with Prague Philharmonia and a 40 piece choir, attended by French President Nicolas Sarkozy.

BROADCAST BRIEFS

Public broadcaster Radio France runs services for the domestic audience, French overseas territories, and foreign audiences. Radio France Internationale is one of the world's leading international stations. Its Arabic-language Monte Carlo International service is available on medium wave (AM) and FM in many Middle East countries.

The international French-language channel TV5 Monde, financed by Belgium, Canada, and Switzerland, is available globally. Global satellite news channel France 24 launched in December 2006, with services in French and English. Its Chairman said the channel aimed to present "…a different point of view from the Anglo-Saxon world".

France's flagship TV station, TF1, was privatised in 1987. The growth of satellite and cable has led to a proliferation of channels. The biggest satellite pay-TV operators, CanalSatellite and TPS, are set to merge. The new group will be controlled by media giant Vivendi Universal.

A digital terrestrial TV service, with more than a dozen free-to-air channels, is being rolled out.

France's long-established commercial radio stations, particularly RTL and Europe 1, still command large audiences. They have been joined by a multiplicity of FM stations, often consolidated into successful commercial networks such as hit music station NRJ, and oldies station Nostalgie.

VITAL STATISTICS

FULL NAME	French Republic
POPULATION	61.6 million (UN, 2007)
CAPITAL	Paris
AREA	543,965 km^2 (210,026 miles^2)
MAJOR LANGUAGE	French
MONETARY UNIT	1 euro = 100 cents
MAIN EXPORTS	Machinery and transport equipment, agricultural products, including wine
GNI PER CAPITA	US $34,810 (World Bank, 2006)
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Sonacom Among First To Invest In Xynergi

Post production specialist Sonacom has transformed its facility in Neuilly sur Seine, by installing Fairlight Xynergi desktop media creation systems in each of its four High Definition 5.1 surround sound studios.

The full service facility, which counts major French broadcasters and advertising agencies among its clients, managed the transformation in less than three days with the help of technical staff from Fairlight's French distributor, EuroMedia Technologies.

Denis Derigent, Managing Director of EuroMedia Technologies, says: "We started the installation on Friday night and had to have it completed by Monday morning in time for a client booking. Sonacom is one of the first Fairlight customers in the world to completely transfer to Xynergi, and the main challenge we faced was ensuring that the engineers adapted to their new environment in such a short timeframe. It was very tough and very sudden, but they were incredibly motivated. By Monday morning, everything was running perfectly and the engineers were already working confidently with their new equipment."

Sonacom's decision to switch to Xynergi was based on a desire to implement a fast editing and mixing interface that would allow it to speed up workflow without compromising stability and synchronisation. The facility already had a good relationship with Fairlight, having started with an MFX3 before upgrading to Dream Station powered by QDC.

Dominique Perrin, CEO of Sonacom, says: "Fairlight has always offered the fastest workstation on the market, and we've had very good experiences with its products. By combining Xynergi with Fairlight's Crystal Core Digital media engine, we now have all the tools we need for high-end audio for video production in all widely used surround formats."

Perrin adds that Xynergi's Macro functionality and open format architecture made it the right choice for Sonacom, especially as it allows the facility to network all four studios and control audio and video from the same engine.

"We have an intense workload, therefore it is very important that we use every minute of studio time productively," he says. "When clients arrive they want to know exactly how long their project will take – and the sooner we can complete the project, the happier they are. Installing Xynergi systems into each of our studios has already enabled us to speed up our workflow, and as we become increasingly familiar with the features offered by Crystal Core and Xynergi, we are finding even more ways of working faster."

Alongside its four Xynergi media production centres with Pyxis track SD/HD Video, Sonacom has also installed six Xynergi 12 fader Sidecars with metering units, five SX-48 MADI interfaces, and a centralised AudioBase3, which is localised onto two large 16TB redundant servers.

"The Crystal Core engines are perfect for our facility, because they take up very little space," Perrin adds. "Another key selling point was Xynergi's ability to support many different file formats, because we never know what file format our clients are going to arrive with. Equally important was the sound quality that Xynergi delivers – and the fact that it works with HD video. The evolution possibilities offered by Crystal Core undoubtedly make this system the best in terms of quality, functionality, and price."

Sonacom is now planning to install an AV-Process 3.0 CCE (Crystal Core edition), a new tool developed by EuroMedia Technologies and supported by Fairlight, which allows facilities to automate their entire production workflow.

"The engineers at Sonacom are a dream team to work with because they are so willing to share their knowledge and experience of how products work in the field," Denis Derigent adds. "This gave us a real opportunity to feed back to the R&D engineers at Fairlight, who are always willing to improve the macro functionalities of Fairlight products so that end users get exactly what they want. In today's business, this type of cooperation between a manufacturer and an end user is something that is rarely seen."

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Hardware Addiction

Shiny gadgets and flashing LEDs become a problem that JERRY IBBOTSON doesn't want to solve.

The following conversation never took place. Honest.

"Come in Mr Ibbotson, don't be shy. We're all friends here. Sit down and relax."

"I'm nervous you see. I'm not sure if I belong here."

"Well admitting you have a problem is the first step to getting help. We've all had to do it."

"All of you? But there are so many people here. My God, there's Paul Mac."

"I know, now take a deep breath and make that first step."

"Okay. My name is Jerry Ibbotson and I'm... I'm..."

"Go on Jerry. You can do it. What are you..?"

"I'm addicted to technology. That's it. I'm addicted to shiny new technology. Things with LEDs that change colour depending on the hardware status. USB2 versus Firewire. Satin matt cases in pale blue or black. Touch sensitive screens. Master volume control knobs. Higher contrast ratios. Oh God, I want it all..."

"Well done Jerry, you've taken a great step forward. Now please carry on."

"I don't even know when it started. But there's just so much... stuff... out there. Mixers, speakers, soundcards, recorders. Everywhere I look someone's making something new. And they promise so much. With their backlit LCD screens and simple to access menus with rubberised buttons, all running off a single battery source. It's just not fair."

"What do they promise you Jerry? What promises do they make?"

"That they'll make my work sound better. Make recordings cleaner and mixes brighter. And it happens so quickly. I just look at their pictures in magazines, you know, hardcore stuff like *Audio Media*?"

"Sadly, we do Jerry."

"Well I see these adverts and read these reviews and I just want it all. It starts so easily. A new mic here, a new pre amp there. Then before I know it I'm staring at stuff that I don't even understand. Shiny boxes that baffle the life out of me. But still I want one. I could spend every penny I earn on new stuff. I want bigger speakers, but I know that they'll never be truly big enough. I want a massive desk but I know that half the faders would be untouched. Someone could bring out a plug in to make me sound Welsh and I'd buy one. It's become..."

"An addiction?"

"Yes. Yes it has."

"And you want us to help you find a way out?"

"God no. I just wondered if anyone here knows where I can get a decent set of XLR leads from..."

JERRY IBBOTSON runs Media Mill, a York-based audio production company started in 2000 that specialises in sound for video games. Prior to this, Jerry was a BBC journalist for ten years, ending his spell with the Beeb as a reporter and newsreader at Radio One Newsbeat.

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A Secondary Virtual Reality

How virtual is a performance if you earn real money from it?, asks RICHARD WENTK's digital avatar.

It's just after 3am, and I'm playing live to an audience from all over the world. I'm also wearing a bathrobe and watching my cocoa cool, while the laptop works its way through some improvisational Reaktor patches under some light hands-on guidance. Gigging from the studio is certainly more convenient than the traditional sweat, beer, and Transit van approach. There won't be any heavy lifting after I've finished – unless you count the empty cocoa mug on its journey back to the kitchen.

The Internet continues to be a surprising thing, and while most press attention is still focused on downloads and the end of the age of plastic, new opportunities are appearing elsewhere. The biggest surprise has been a completely new culture of virtual live performance that has developed in online worlds like Second Life (www.secondlife.com). Second Life is divided into parcels of virtual land, available to own from around US$10 and upwards, and a simple setting for each landowner makes it easy and cheap to pipe in a live audio feed. Most parcels default to Internet radio stations, but anyone with a spare laptop can set up a free Oddcast server, plug a console into it, put on some headphones, and be ready to go. This low cost of entry means that Second Life has an amateur and semi-pro live music scene that would be the envy of any city in the world, with styles from traditional R&B, to experimental electronica, to classical.

Clubs and virtual locations are easy find, and easier still to perform in, and Second Life has a simple group-based one-to-many messaging tool that makes promotion much simpler than the usual flyposting run. What makes Second Life different is its link between virtual and real currency. At an exchange rate of around 270 'Linden Dollars' to US$1, Second Life offers a simple and cheap micro-payment solution for live performers. Making money from music isn't any easier – or harder – than it is in real life. Most musicians make very little, a smaller number get by, and a few do well enough to earn a living. But artists with a saleable style can make substantial real-world income from spin-off CD sales and downloads, and also from virtual tips. It takes constant hard work, networking, and self-promotion – just as it does in the real world. It's an easier sell for musicians because front-person charisma is less important in Second Life – film star good looks can be bought for a few dollars, and actions and gestures are pre-scripted.

Is there a downside? Second Life is technologically creaky and socially seedy, with plenty of virtual porn, and – even more bizarrely – a thriving virtual escort industry. Of course the real world music business has never been squeaky clean. But it's not nearly as dull as Second Life's almost endless virtual mall sprawl and show homes. Fortunately, it's not all sleaze and play-shopping. Performing in Second Life can be a little like playing in an animated doll's house – but fans are fans, and sales are sales; and it's relatively simple to start a spin-off virtual radio show with a guaranteed audience that bypasses the traditional MySpace scrum. It may not be the perfect model for the future, but it's an interesting extra media outlet for the present. And as oil prices aren't likely to come down again soon, no one should be surprised if virtual performances become an unexpectedly busy new market in the short and medium term.

RICHARD WENTK is the owner of Skydancer Media, a digital production company providing sound, image, design, and consultancy services to various clients in London and the West Country.

SOMETHING TO SAY?

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The Develop Conference Audio Track 2008

Do you think sound for games is still bleeps and bloops? Then wake up – and welcome to a world of A-list talent, orchestras and 7.1. By JOHN BROOMHALL.

As videogames continue to steal ever more entertainment market share from records and movies, there's a growing mainstream interest in the fascinating creative challenges and potentially lucrative business of providing top notch outsourced music, sound, and dialogue content for videogames.

As he prepares to chair this year's Develop Conference Audio Track, John Broomhall reflects on its overall theme of 'inspirational sound design' and why you should take advantage of an excellent opportunity to brush shoulders with some of the world's leading game audio practitioners.

"Sound Design Isn't A Science – It's An Artform."

This striking statement from Greg O'Connor-Read of music4games.net perfectly encapsulates the overall theme of the day-long Audio Track at this year's Develop conference, now firmly established as Europe's premier annual game audio gathering.

The 'Inspirational Sound Design' thread running through the day is borne of a firm conviction by those who have shaped this year's content; that our focus in game audio should rightly be on creativity rather than technology. We have computing horsepower, and increasingly we have the tools to harness it – but what will we do with it?

> "...our focus in game audio should rightly be on creativity rather than technology. We have computing horsepower, and increasingly we have the tools to harness it – but what will we do with it?"

One of this year's speakers, Adele Cutting (Senior Audio Director, Electronic Arts) remarked to me some time ago, "So we can have all the sound we want? Now we have to go and figure what to leave out." Historically, game audio technologies have pushed us towards a dense, literal description of the world, with carefully placed 'sound emitters' at x-y-z coordinates in 3D geometry spaces, sporting scientifically accurate acoustic reflections and reverberation. Realism has been the watchword. We've enjoyed both the challenge and joy of bringing virtual worlds to life.

But what of the use of subjectively chosen sound treatments purely to enhance and underscore drama and narrative? Music is often left to do the job – sometimes beleaguered by relatively clumsy attempts to shoe-horn the functional grammar of film music into a relatively unpredicable interactive experience.

Meanwhile, how many games have fully explored the immensely potent force of sound that tells a story, provides exposition and characterisation, leads navigation, drives primal emotional responses (perhaps even in juxtaposition to picture) – sound that works beyond the literal using metaphor and suggestion?

Of course, in games audio, our work is inextricably bound up with technological considerations and that cannot be ignored. Nevertheless, it's right that this year's conference should focus on the power of ideas when it comes to audio. The future craft and artistry of sound design for video games is ours for the taking.

We have much to learn from each other, and the Audio Track will feature some of our most respected practitioners, each explaining what gets their boats floated and how they are bringing fresh, and in some cases, pioneering thinking, and also approaches to their forthcoming titles. What's more, in a first for Develop, we'll be welcoming some of our respected peers from movies to discuss how 80 years of film sound might inform video games further as we now struggle less with hardware constraints and more with the challenge of consumer expectations driven largely by their movie soundtrack experiences. The Audio Track will start a dialogue as we discuss the future of sound with a keynote panel of audio luminaries from both games and movies.

The planned programme features DICE's Head of Audio David Mollerstedt, Sony's Audio & Video Manager Dan Bardino, Foley Editor/Sound Designer Alex Joseph, Sound Re-recording Mixer Tom Johnson, Dolby's Director, Interactive Voice Technology, Paul Boustead, SCEE Cambridge's Audio Manager Garry Taylor, Zoe Mode's Audio Director Ciaran Walsh, and a rare opportunity to hear RARE's entire audio team discuss their ground-breaking work in this year's 'Welcome To Our World' session – a Develop coup. The list goes on.

If that's not enough, with the bulk of Europe's video games industry represented at this year's conference, there will be networking opportunities a-plenty. If you're involved with sound, music and dialogue for games, or would like to be, the Develop conference Audio Track really is the only place to be on 31 July.

Come and be inspired.

Get Down With It

Get down to the Develop Audio Track this year, especially for the Audio Media/Develop key note panel session, featuring the great and the good from film and game audio production.

The Develop Conference and Expo 2008 will take place from 29-31 July, 2008, at the Hilton Brighton Metropole in Brighton.

www.develop-conference.com

An Interview With Dave Ranyard

Video-game creatives are moving forward from devising realistic audio environments, to authoring soundscapes that grab the emotions, as Sony's Dave Ranyard, and panelist for Develop's Audio Track, suggests to KARL FOSTER.

Realism has long been the Holy Grail for video-game sound designers, and today's super-powerful consoles offer the computing power to render virtual worlds in high-quality 5.1 surround. However, Dave Ranyard, Creative Services Manager for Sony Computer Entertainment Europe (SCEE), sees the emergence of a new approach to 3D sound design.

"Traditionally, you can do it algorithmically," he says. "If you're in a 3D environment, we have all that geometry information so you can place sounds with fall-offs, roll-offs, and occlusion if there're walls, kind of using physics to help equate it to the real world. Having said that, what's more interesting is to go far beyond just emulating a world. I can go and stand in Oxford Street and hear the real world.

"What we're interested in is using sound to emote the player. It might be that we twist reality. You can start off with a bed by placing things in the real world, then change levels and filter settings based on what's happening for the player."

Audio Track panelist, Dave Ranyard.

The PlayStation 3 sits at the heart of many an ardent gamer's system, possibly equipped with a high-def screen and in-home surround system that might otherwise be used to watch movies. However, devising game sound to take advantage of such kit requires a different perspective, says Dave: "In some respects, you potentially have a bit more freedom because with a movie, you don't want too much going on behind you and to the sides, because it disrupts the movie. Whereas in a game, if you suddenly have something happening behind you, that's important because you can turn your character around and look at what it is. It's adding value to the game experience."

With facilities in London, Cambridge, and Liverpool, each equipped with Pro Tools, and with Logic, Cubase, Ableton Live, plus Sony's Sound Forge brought to bear, depending on the demands of the project, Dave and his team certainly have the tools to cope with the complexities of interactive gaming audio.

"We've special software used for developing interactive sounds," he reveals. "In particular, we use software called Scream by which you can script sound. One of the issues you face doing audio for games is that you don't want repetition. Every time you have a footstep or gunshot, it could sound identical to the previous one, so we use scripting to resolve that. We might base the parameters of the sound on how hard a button is hit, what the player's health is like, or the previous sound triggered. Then we may play a sound that's a mix of three different sounds, and change the parameters of filter settings and reverbs so that, say, one gunshot won't sound the same as another. We may also use signature sample sets so that, for example, the main player's gun sounds will be different to other characters' gun sounds. Again, that reinforces you as the player and the effect you're having on the environment."

While the SCEE folk gather effects for a project, getting out and about with hard-disk recorders, or buying in SFX, ambiences, and more, there's also the music to consider. Some of it is written by Dave and company, but the musical backing, as well as dialogue, is usually outsourced to established acts. "Kraftwerk provided music for the latest Wip3out release," he says. "I think they've never been on a video game before, so that was really great for us. Getting really interesting musicians on board is a big part of it for us."

Naturally, this all costs money and Dave estimates the audio will account for 10 per cent of a project's budget, although it could go as high as 20. Hence a tight workflow is essential in avoiding costly mistakes. "We'd be involved at the conception stage because, at the very least, we help out with music choices. A concept might be presented as a video, sometimes like a 'visual collage' – essentially, a mood piece giving an idea of what a game's about by using video clips from film. We might write reference music for that, and we may also do some sound-design. We may also help with sound signatures for a key character. Moving forward, we'll do an overall audio plan and there may be dialogue recording in that, but the final say will be with the creative directors.

"There may be a prototype and again, we'd be in there doing audio for that. On a number of occasions we've provided an audio 'vision' for the project, and this can be a great opportunity to sell to the producer of the game why we're proposing a certain budget."

With dialogue and music in place, plus key effects tagged to what could be thousands of specific animations, it's a two or three week job to mix and polish, monitoring via Genelec 1029A and 1030A cabs, plus a sub "the size of a washing machine," jokes Dave. "Within the game engine, we'll have some extra software that kind of gives us a mixing desk and the great thing, when you get to PS3, is that we can actually plug in a MIDI-compliant mixing desk." The PS3 also handles AI-type signal processing that modifies the audio depending on the state of play. Says Dave: "One of the things we try to do is ship every game with a sound engineer in the box."

JERRY IBBOTSON reigns in the power of 660 horses to put the SE Electronics' 4400 mic through its paces.

SE ELECTRONICS 4400

Dynamic Microphone

In recent years the UK-based firm SE Electronics has carved quite a name for itself in the pro audio field. Its products include microphones, Ghost acoustic treatments, and the Reflexion Filter. It's quite a feat; building a reputation for designing and manufacturing excellent products in a relatively short space of time but that's exactly what SE Electronics has managed to do. I was in another firm's studio recently and spotted two SE mics at work, while we use a 3300 in our voice booth, as well as Ghost acoustic panels.

So I was quite excited to get a call from the company, asking if I wanted to try out a pair of its new 4400 mics. These are seen as multi-purpose microphones but are probably most likely to be used for music recording. I say that in a rather clumsy 'capturing-of-music-for-enjoyment-in-the-home' way, because our chief use for any mic like this is in the recording of vehicle engine audio for video games. Yes, I know it's an odd way to make a living but someone's got to do it...

We currently use a range of different mics for this purpose, depending on the job in hand, including a pair of AKG 414s.

The mics will hit the market at £399 for a single, or £849 for a hand matched pair. They're equipped with a unique design of external shock mount and come in a padded metal flight case. The pair also travel with a stereo mounting bracket. They're finished in matt black and the surface looks like it will stand up well to wear and tear, either out in the field or being rigged and de-rigged in the studio or session room by sweaty hands. I've got one on my desk as I write this (a mic, not a sweaty hand) and I keep picking it up just to turn it over in my fingers. It's remarkably petite and that slightly rubberised finish actually makes it a pleasure to handle.

On the front are four dip switches. These control the -10 and -20 db pads, two types of bass roll off, and response settings for omni, figure-of-eight, cardioid, and hyper cardioid. A mesh wafer-shaped grill covers the capsule.

The shockmount is something SE is particularly pleased about. It lets you fix the mic in any position, although I did end up playing with it, Rubik's Cube style, for a few minutes before I could get it completely sussed. The main point is that the bracket which grasps the stem of the mic can be flipped in or out of the main cat's cradle. This lets you shift the mic towards or away from the subject of the recording. You can also rotate and spin the microphone in any direction.

In Use

The first test of the 4400 was literally just that, a quick vocal test in the studio. The voice sounded crisp and clean, if a little sharper than the 3300 that it was replacing. But the main test for us was to take the SEs out on a location recording session.

The opportunity arose in the form of a test recording at a new rolling road facility I'd found close to the Media Mill studio in York. We use rolling roads to record vehicle engine audio for games (imagine doing Foley with a V8 engine and you're in the right ballpark). We needed to hear how good it was for our purposes, and the best way to find this out was to capture it in use.

For recording, we use an Edirol R4 Pro hooked up to mics like AKG 414s standing inside Reflexion Filters to deal with the acoustics. For the purposes of this test, we simply switched microphones and left everything else the same. We set the mics to cardioid, switched in a -10db pad and the lower of the two bass roll offs. One mic was positioned near to the exhaust of a car (a crazy Toyota Supra with 660 horsepower!), while the other was raised up to the level of the engine bay. The car was fired up and worked its way through the revs, before being held steady. The recorder was situated outside of the main test bay, though not sound isolated, and initial monitoring through headphones suggested that nothing was drastically wrong. The SPL levels being fired out by the car (particularly the exhaust) were extreme, so the first hurdle to cross was the ability to handle them without distortion. The 4400s coped well.

Back in the studio, the files were checked and replayed. As it turned out, the noise of the car's immense tyres rubbing on the rollers was deafening, but just as important was hearing what kind of recording we'd got with the different microphones. The answer: excellent. The clarity of the audio from either end of the car carried the sounds of the thrashing motor and booming exhaust. There was some discussion about whether the recording was a tiny bit bass light, but if that was the case, then it was nothing serious.

SE mics are always well priced, but does that make them budget affairs? Well, if you are in the lucky position of having a limitless budget for microphones of this type, then you'll be pleased to know that the 4400s are well designed and well built units that perform excellently, and come with that very flexible shock mount. If you happen to have a limit on your spending, you'll also be pleased to note that they won't break the bank.

INFORMATION

£ 4400a GB£399.00 (inc.VAT), Matched pair GB£849.00 (inc.VAT)

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THE REVIEWER

JERRY IBBOTSON runs Media Mill, a York-based audio production company started in 2000 that specialises in sound for video games. Prior to this, Jerry was a BBC journalist for ten years, ending his spell with the Beeb as a reporter and newsreader at Radio One Newsbeat.

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MIKE SKEET finds that twice is even more nice, as the MKH800 TWIN cuts its teeth on a new orchestral performance.

SENNHEISER MKH 800 TWIN

Dual Output Condenser Microphone

The new Sennheiser MKH 800 TWIN is a development of the earlier two capsule MKH 80 and MKH 800, switchable polar pattern microphones, in their well known MKH range. The twist here is that the outputs from the two back-to-back cardioids are now available separately via a 5-pin XLR socket.

You don't lose anything with the TWIN version, as it now allows remote control of the polar patterns on your mixing desk – an adventure that many might relish.

Having used my earlier MKH 80 as a variable polar pattern Mid mic in an M&S rig with an MKH 30 figure-of-eight as the Side mic, I can carry on as before with the TWIN, now with the polar patterns remotely selectable. If I separately record all three outputs from the M&S rig, the selection can be made in post production.

The Physicals

Available in satin nickel or dark grey Nextel finish, there are no on-body switches, resulting in a shorter body than the MKH 800. A short 5-pin to two 3-pin XLR cable is supplied. Active 48V phantom powering is separately shown for each capsule – blue LED on the front, red LED on the rear. Usefully, these will not illuminate if the phantom voltage falls below the required 42V minimum.

Two mic stand clips are provided in the foam lined aluminium carrying case, both suiting the 'side fire' physicals of the mic. One has rubber O-ring shock mounting – both with two 90 degree angling choices.

A Polar Choice

With a mixing desk's usual facilities on two separate channels, you can easily control the polar patterns of the MKH 800 TWIN. The manual clearly illustrates what you do. You can go from cardioid by just using the forward facing capsule, to omni by using both summed at the same levels, or to figure-of-eight by summing with the rear capsule feed out-of-phase. Then, with an appropriate lesser level from the rear capsule, you have the useful choices of soft cardioid, or hyper-cardioid when in the out-of-phase mode, and any pattern in-between that you wish.

Apart from using the MKH 800 TWIN as a remote variable polar pattern Mid mic, plus the MKH 30 Side mic for M&S derived stereo, it is easy to use the same rig with additional decoding to obtain very effective Surround, taking advantage of seperate front and back cardioid outputs and the single figure-of-eight to decode seperate front and rear stereo signals.

Location Concert Recording

It was some three years ago that John Willett of Sennheiser UK brought along a modified MKH 800 as a 'MKH 800 TWIN prototype' to a Faber Music stereo CD recording and we came away with its two cardioid outputs and the figure-of-eight output from a MKH 30 rigged with it, for later 5.0 Surround listening, courtesy of a Deva 5 recorder.

This time, John was even more helpful, as when I phoned him about a very interesting Octet recording I was about to do, he was in Germany at the factory, so he brought a new TWIN back for me to use a day later.

The concert recording was in a very good church acoustic in Claygate, Surrey. The octet of 'five strings and three wind', to use the musical terminology, were in the usual semi-circle, suiting one stereo pair or 'surround triple' in this particular case.

For the stereo purpose of being at the concert, the Mid was mixed as a soft cardioid, the Surround being obtained later from the three mic feeds directly recorded, post gain settings, as line inputs on to an Edirol R4-Pro. The MKH 30 was used with a 4dB higher gain setting than the TWIN. The first piece at the concert was a very interesting first performance of a transcription for the eight instruments mentioned earlier, by composer Cheryl Frances-Hoad, of a Mozart composition for a piano duet.

During the interval, before carrying on with a Schubert Octet, a couple of the performers came to the back of the hall where the recording kit was set up, and had a listen on some Sennheiser HD 650 open back headphones. It seems that they spread the message amongst their colleagues that, apart from them all playing rather well, they regarded the recording to be very good indeed!

On returning home, playback on speakers was possible and my judgement agreed – a view that is not always taken after a long day and late journey back! The double bass comes over rather well, as it did live in the hall. Imaging was clean and clear, however it and the balance could have been subtly better had the staging allowed a wider semi-circle layout to have been possible.

The Surround

In my ITU layout of two ATC SCM 20 and ATC 10 loudspeakers, for the Centre and the Ls and Rs, it comes over very well. It was easy to get the Double M&S decoding right, with a helpful check from a DK Technologies 'Jelly Fish' display to confirm.

Having done a lot of Surround with the pseudo W,X,Y route, then having to convert them to two cardioids and one figure-of-eight for the further decoding to 5.0, it was clear that with the use of physical cardioids, as with the MKH 800 TWIN, you don't have to worry about how accurately you combine an omni with a figure-of-eight in the creation of your cardioids.

Conclusion

I might well be the first purchaser of the MKH 800 TWIN. A figure-of-eight is planned to be included in the MKH 8000 range and I am hoping they include a mounting system for it to be used on top of the TWIN. This will be a neat quality package, providing a remote polar pattern choice of Mid for Stereo M&S use, apart from also being very effective as a coincident Surround rig.

INFORMATION

£ **GB£2,495.00 (exc.VAT)**

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THE REVIEWER

MIKE SKEET is an experienced location music recordist who knows more about microphones and stereo recording than most, and is currently spending a lot of time recording in surround sound.

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Networking Audio Systems

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If there's no room in your rack for a full-sized Tube-Tech, you could try this is virtual version. RICHARD WENTK feels the weight.

TC ELECTRONIC TUBE-TECH CL1B

Virtual Compressor

When a metal box costs upwards of £1,600 for a single stereo instance, there's a lot to be said for virtuality. The CL1B is an official Tube-Tech plug-in, developed in conjunction with TC Electronic – a ProTools version is due soon – so it carries the weight of Tube-Tech's analogue reputation on its virtual shoulders. As someone who hasn't spent a huge amount of time in rooms full of analogue racks, I was curious to see if that reputation was justified.

Overview

After installation and authorisation, which requires a visit to the TC website to download a license, CL1B loads into a PowerCore slot in the usual way. At 44.1kHz, it requires 41% of a single CPU, increasing linearly with sample rate. On a PowerCore X8 system you can run up to sixteen instances at 44.1kHz, although that won't leave many cycles for anything else.

It Looks Like The Real Thing...

Visually, CL1B appears as a typical Photoshop attempt to create a plug-in panel that looks as much like the real thing as possible, complete with bakelite virtual knobs painstakingly rendered so that the highlights stay in place as you turn them. There's also a virtual VU meter that can be switched to show input, output, and compression. Panel markings are minimal, making drive-by-number engineering unlikely – not usually a bad thing. The ratio knob is marked with 2:1 at one extreme, and 10:1 at the other, and between those limits you're on your own. Attack and Release are barely calibrated at all – extremes are marked 'Fast' and 'Slow', and you'll need to look in the hardware CL1B manual to find that these are 0.5ms to 300sec, and 0.05sec to 10sec respectively. At the far left there's a giant In toggle, that is paralleled by an on/off switch at the far right. It's not clear what makes In different to on/off, except that it leaves the virtual power neon and the VU meter's virtual backlight on, which presumably helps brighten up some virtual studios.

Filling And Smoothing

If the panel is minimal, the sound isn't. Twenty-eight presets are available, and they're a good starting point for further experimentation. When using a bus comp, the CL1B fills out the bottom end and smoothes out the top. The difference isn't dramatic, perhaps falling closer to 'production values' than 'obvious processing', but the improvement is easy to hear. On drums, it was easy to add punch and weight, and vocals and guitar were also smoothed and filled out. In short, the CL1B does what a compressor is supposed to – it fills out the sound, and brings some of the more subtle detail forward.

An Expert Setting

When set expertly, it makes almost anything sound less literal by giving it various degrees of larger-than-life polish. The catch is that even though there aren't many controls, ratio, threshold, attack, and release are all critical to the sound, and they need to be set 'just-so' before the processing clicks into place and starts to sound right. Part of the secret seems to be that there are shifts in timbre happening at the same time as shifts in dynamics. A solo bass drum illustrates this in a spectacular way – attack and release on their own can change the sound from a toppy click, to a lifeless flap, to a full-bodied gut-punch. Gain can have a similar effect, creating even more drastic changes. Transients are more susceptible to this than pads, but even small changes in dynamics, including synth pads, can be enhanced to create a livelier result. One trick seems to be to push gain and threshold until the sound starts to clip, and then dial them back a little – the best effects seem to be created near the clipping threshold. As there's no clip indicator this has to be set up by ear. You can of course push the sound further for a crunchy audio fry-up.

Conclusion

Although Tube-Tech rack boxes are better known in music studios, the CL1B has plenty of applications in post, adding body and liveliness to all-digital mixes, and also sweetening and filling-out voice-overs. Tube-Tech products seem to split engineers into solid for and against camps. PowerCore X8 comes with a trial version, which should give you enough time with it to decide if the CL1B is doing something you'll want more of. At GB£325+VAT it's not going to break the bank, and even though multiple instances won't look as impressive as a wall of blue anodised metal, and there's no feature for linking multiple instances, as there is in the hardware version, this is still one of the better sounding and more creative virtual compressors on the market at the moment. If it's not quite a must-buy, it's certainly a must-listen. AM

INFORMATION

Ⓕ **POCOX8 GB£949.00 (exc.VAT), Tubetech CL1B £379.00 (exc.VAT)**

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THE REVIEWER

RICHARD WENTK is the owner of Skydancer Media, a digital production company providing sound, image, design and consultancy services to various clients in London and the West Country.

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WANTED

Russian Director Timur Bekmambetov steps into an international spotlight with *Wanted*, an action/fantasy film starring James McAvoy, Morgan Freeman, and Angelina Jolie. STROTHER BULLINS reports.

In his native Russia, Timur Bekmambetov is already well known as the Director of 2004's *Night Watch*, a fantasy film that became the highest-grossing Russian release ever. Bekmambetov followed this success with a sequel, 2006's *Day Watch*, thus cementing his reputation in the film industry as a director to watch.

Now, with *Wanted*, the world is given the opportunity to experience Bekmambetov's unique film making style. Shot in Prague and Chicago, *Wanted* is truly an international film with big Hollywood support; its post-production was done in Moscow and Los Angeles. Universal Studios brought on names – Angelina Jolie and Morgan Freeman, for example – to tell a story based on Mark Millar's 'Wanted' comic book series.

Portrayed by James McAvoy, central character Wesley Gibson is a young man tempted with a chance to avenge his father's murder. Sloan (Freeman), the father's friend and fellow assassin-associate, provides Gibson with the opportunity as well as training and a future in the assassination business. In the ensuing adventure, Gibson works with Fox (Jolie), Sloan's second in command, a capable assassin who also serves as the film's sexy love interest.

"Universal really poured valuable creative resources into this film and supported this filmmaker to express himself fully," offers Wylie Stateman, Supervising Sound Designer for *Wanted*. "We put something on the screen with big star power – Angelina Jolie and Morgan Freeman – and the efforts of truly international craft talent. It's a lovely blend to support a genre that will hopefully have a big international appeal. The fantasy/action genre is very popular internationally. Filmmakers from around the world tend to have different approaches. But Timur as a Russian filmmaker has an interesting approach to the fantasy/action genre with the support of an American studio with those financial resources backing him."

Getting On Board

Stateman's prior experience working with *Wanted* Film Editor David Brenner, helped make the film an easy gig to say 'yes' to. "I worked with David on quite a number of projects," Stateman offers. "*Born On The Fourth of July* was one of the big ones; he won an Oscar for that, and I won the BAFTA for sound. We've collaborated on and off for about 20 years. Whenever he has something really challenging, we talk about it. We have a creative partnership and a very comfortable, efficient workflow and methodology."

In addition to the comfortable, longstanding history of collaboration between Film Editor and Supervising Sound Designer, the intriguing aura surrounding Bekmambetov's work made *Wanted* an exciting idea for the pair. "I was attracted to the project as David was: because of Director Timur Bekmambetov," says Stateman plainly. "David helped work on the US released versions for Timur's Russian films *Day Watch* and *Night Watch*. The films demonstrated ▸

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a tremendous level of creativity and understanding of contemporary, avant-garde filmmaking. Timur is a progressive Russian filmmaker, and this is his largest, most ambitious project to date."

Give And Take

For major studio projects, directorial ambition most often requires crucial preparation from its participants; it certainly did for Stateman and his cohorts in *Wanted*'s sound department. The film is very intense in its application of special effects and CGI, and the sound team members were allowed to develop its palette over ample time. This created a circular, synergistic content creation process.

"We've been part of the post-production teams from almost the very beginning," Stateman insists. "Designers Harry Cohen and Ann Scibelli had been on the project for nine months – a very nice period of time – allowing us to develop the sound effects treatments as early as conception, pre-visualisation all the way to the final mix. We've been working with Timur's CG partners and with David [Brenner], designing sounds that have influenced the development of CG images. We've actually provided sounds, and they have animated to those sounds; they have provided images and we have embellished to those images with sound design. Then they have added another layer of imageries to the sound. We were constantly leap frogging with each other to create a cohesive, coherent treatment."

Working In Rhythm

At the physical core of *Wanted* is rhythm, illustrates Stateman. Clearly, the pacing and general being of the film is a result of that rhythm, as much of the film feels like a cadence and unfurls like a dance. *Wanted* is truly a unique take on audio-visual storytelling. It is obviously incredible but looks and sounds real.

"The film is largely designed around rhythms that are organic and emotional," notes Stateman. "We used visual rhythms generated through the film editing process, and audio rhythms that were contributed by my team at Soundelux and the music team was headed by Composer Danny Elfman and Bill Abbott, the Music Editor. We had a situation where we all handed off to another; Danny, Bill, and I and my team, including Harry and Ann, worked with the visual effects designers in Moscow. All this was headed by David and Timur into one interesting pastiche of images, rhythms, and beats."

The aural elements that ultimately became rhythms began as Cohen and Stateman collected hundreds of sounds, including details from *Wanted*'s production track as well as studio and Foley stage recordings. "We then created instruments that allowed us to manipulate all those elements as music, using both speed and pitch," explains Stateman. "It's a very organic track, and personally, a career culminating achievement, seriously. For people that hear it as it's intended – in a good theatre – they will understand how dynamic this film really is from a sonic standpoint."

From a visual standpoint, the work of David Brenner, through rhythmic cuts, makes it all work. "We immediately developed sound design treatment for those rhythms," offers Stateman of the creation system. "The CG people would embellish the visuals to those rhythms. We composed to those rhythms. Then, we mixed all that together so that every element of the audio hands off from dialogue into sound design, into music, back into sound design, back into dialogue. Danny Elfman did a tremendous job on the music."

As a result, Wanted's elements connect in a fantastic, magical way. "Together, it's like witchcraft," summates Stateman. "A heart beat becomes a musical piece that becomes a train that becomes the facial expression of the actor – all cut in rhythm and time. We're not about the *counterpoint* of the rhythm; Timur wanted all these elements, including the visuals, to hand off from one to the other in interesting ways. When people see this film, they get it. It's obviously structured to support this high concept that we all went into this wproject embracing."

Hinged On 'Assassin Time'

A crucial vehicle for all of the inherent rhythm of *Wanted* is courtesy of a plot tool referred to as 'assassin time.' Stateman explains: "It is hinged on a fantasy that there's something we call 'assassin time' – it's where our lead characters can speed up their heart and respiration and slow down time. Through their expression, they can slow time and manipulate things – curve and dodge bullets, for instance."

To Stateman, the work of Film Composer Danny Elfman in particular helped develop this interesting use of manipulated time. "The music had to express 'assassin time,' and all sound design is in rhythm to that," he explains. "Actors can go from a normal resting heart rate to almost 400 beats per minute and everything tracks with those click tracks. Literally hundreds of tracks are syncopated in time, handing off from the visual to the soundtrack and back into the visuals. So, the film explores this fantasy of time, and 'assassin time' is part of the character structure of the film. There are many, many moments in the film where we're shaping the design and action of the film around 'assassin time.' The film edit, dialogue, sound effects, and music all express 'assassin time' in very clearly developed rhythms."

A Fantastic Mix

At Universal Studios' Hitchcock Theatre, Academy Award-winning Re-Recording Mixers Chris Jenkins and Frank Montaño finished the soundtrack "…on the latest, most modern Harrison mixing console," explains Stateman. "They weaved all these wonderful things together and, along with my crew at Soundelux, provided Timur a beautiful sonic fabric that truly captures the rhythms that he is becoming known for. There wasn't a ton of material, so we're not selecting through thousands of tracks. Everything was really developed early on; that's why we spend so many months working on it. The rhythms were developed early. So the mix challenge was keeping things expressive, rhythmic, and organised. The dynamic movement in the theatre is baked into the design. It's a fantastic mix." AM

Project:

Director – *Timur Bekmambetov*

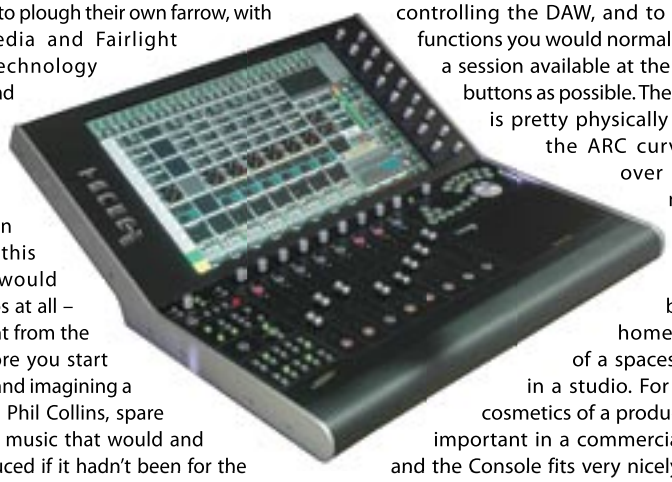
Sound Designer – *Harry Cohen*
Sound Designer – *Ann Scibelli*
Production Sound Mixer – *Petr Forejt*
Dialogue Editor – *Michael Hertlein*
Sound Utility – *David Matusek*
Sound Utility: New York – *Karl Wasserman*
Sound Mixer: New York – *Brian Miksis*
Supervising Assistant Sound Editor – *Branden Spencer*

SMART AV TANGO

DAW Control Surface

Darwin's theory of evolution is still hard at work in Australia – STEPHEN BENNETT looks to the shores of the other side of the world to see what evolution has brought to Smart AV's new baby.

When Australia broke away from the Gondwana super-continent millions of years ago, its isolation allowed evolutionary processes to run riot, resulting in an abundance of unique fauna and flora. In the seventeenth century, when Europeans fell upon the antipodean shores, their tales of egg-laying duckbilled mammals and large, pouched, rabbit-like creatures who could land a punch like a heavyweight, were at first dismissed as the ravings of men probably high from the fungally infected bread imbibed during their long sea voyages. In more recent times, Australia's music technology developers have continued to plough their own farrow, with companies like DSP Media and Fairlight producing innovative technology whose importance has spread well beyond the country's borders. Such is the importance of the latter's Computer Musical Instrument that it has been suggested that without this seminal sampler there would actually have been no 1980s at all – we'd have had to go straight from the 1970s to the '90s. But before you start punching the air with glee and imagining a world without mullets and Phil Collins, spare a thought for all the great music that would and could not have been produced if it hadn't been for the Fairlight and the technology it inspired. Smart AV is a company set up by ex-employees of the aforementioned Australian innovators and their mission (which they chose to accept) is to harness the power of the Digital Audio Workstation (DAW) via their innovative control surfaces – the latest of which is the touch-screen based Tango.



Smart Background

Smart AV's impressive AV Console was covered in the May 2006 issue of Audio Media, but a brief recap of ARC technology wouldn't go amiss. On the original Console, there's a long curved strip (the ARC itself) which is used to select channels and makes it ridiculously easy to bring the required channels directly on to the main section of the console – without all that tedious bank selection you're usually forced into with other DAW controllers. The idea behind the Console is to completely remove the need to use a computer mouse or keyboard when controlling the DAW, and to make all of the functions you would normally need to use in a session available at the touch of as few buttons as possible. The original Console is pretty physically imposing, with the ARC curving gracefully over the top of the main panel and looking for all the world like it would be more at home on the bridge of a spaceship rather than in a studio. For good or ill, the cosmetics of a product are extremely important in a commercial environment, and the Console fits very nicely into the space that might have previously housed an SSL or Neve console. Fast forward to 2008, and more and more commercial facilities are using a DAW of some kind at the heart of their studios, and the producers of music, television, and film are constantly demanding high quality results – but with tighter deadlines and budgets.

THE REVIEWER

STEPHEN BENNETT has been involved in music production for over 25 years. Now based in the wilds of rural Sweden, he runs Chaos Studios and writes books and articles on music technology. He's also a film-maker with several music videos and short films to his credit. www.stephenjamesbennett.co.uk

The Latin Quarter

Into this competitive marketplace, Smart AV has thrown their latest controller, the Tango. "We wanted to bring the ARC and other technologies into a lower cost system that could be used by the music composer as well as those in the mixing and post production environment," says David Hannay, Commercial Manager of Smart AV. "The original Console is pretty well placed if you're looking to replace a traditional desk, but the whole market is moving down in terms of price. What you have now is a situation where digital workstations are becoming cheaper, more powerful, and highly capable – but the drawback is that they are much harder to control." A mouse has its limitations, as Hannay points out. "The Tango is our attempt to introduce a lower cost product that is capable of efficiently exploiting the power of the DAW but is relatively easy to use. A lot of the hardware on the Tango is similar to our more expensive consoles, but it will list at a much lower price – which is a big difference for us," he says. Initially, the Tango will control Apple's Logic and Steinberg's Nuendo and Cubase, but there'll be more DAW support to come in the near future with the addition of Pyramix and Pro Tools (via HUI). "Because the Tango is a flexible system, it's perfect for a post facility in conjunction with something like Nuendo 4 – which has developed into really excellent software. Add the Tango and you have the makings of a really good little post production facility," says Hannay.

"What you have now is a situation where digital workstations are becoming cheaper, more powerful, and highly capable – but the drawback is that they are much harder to control."

Smart Thinking

Joe Narai is Smart AV's Chief Technical Officer and the origins of the Tango lie in his previous life and work with DSP Media. "We first used a touch-screen on DSP's Virtual control surface in the early '90s – which was at the top of that company's range for many years," he says. "However, when we formed Smart AV, we steered clear of touch-screens as we wanted a tactile surface, and the technology was relatively expensive and the screens pretty small at that time." The Tango takes advantage of the reduction in price, and increase in quality and size of touch-screens; and a 22-inch widescreen version forms the centrepiece of the new control surface. "It's about the size of a couple of laptop computers and it weighs in about 20 kilos – this is no flimsy plastic injection moulded unit!" says Hannay. "It's hard to judge from a photograph, but if you look at the faders underneath the screen, you'll see that their spacing is exactly the same as on the original Console." Narai says that using this screen, Smart AV was able put together a low cost solution which would not compromise on the ergonomics of the more expensive unit – "which is something the company is obsessed with!" he laughs. "Basically we have a beautiful hi-res screen which runs at 1680 by 1050 resolution, and the interface software allows us to display any mix of parameters for channels, effect plug-ins and all that stuff," he continues, "The user can decide how they want to look at the parameters and the console can be configured to display text, graphs, or widgets. Eventually, we are planning to release a development kit so the user can design their own widgets and skins." He says that the whole idea of the Tango's development is to explore what can be achieved in presenting the data to the operator in the clearest way possible, while also allowing for customisation – "some people like looking at digits and some don't – the beauty of this is that you can configure it the way you want," he says.

"The Tango takes advantage of the reduction in price, and increase in quality and size of touch-screens; and a 22-inch widescreen version forms the centrepiece of the new control surface."

Smart Design

Architecturally, the touch-screen is right at the centre of the Tango and is housed in a sloping surface placed over a bank of eight touch-sensitive faders. Sixteen notched touch sensitive encoders lie to the right of the screen and are automatically assigned to various user-defined parameters when, for example, an on-screen control is touched. These assignments can be programmed in any way the user wishes. "It's easy to reconfigure these controls to be efficient in the way you want to work, " says Narai. Above each of the channel faders is another programmable encoder along with Mute, Solo, and Inject buttons. The latter works in conjunction with Smart AV's ARC technology to assign the desired parameters to the selected channel. This makes it simple to bring the functions you want to control to your desired positions on the surface – but there's also a handy lock function so certain encoders can be fixed into performing certain tasks. The touch-screen itself extends each channel's controls, depending on what's been selected, and parameters such as panning can be manipulated easily via the touch-screen. A second phase release of software will allow for more composer-orientated parameters to be adjusted directly via the screen- such as MIDI controllers and other plug-in and instrument parameters. "You can already just touch the screen and assign

The Smart AV Tango screen; a touch screen limits the need to use buttons or a mouse.

plug-in parameters to the encoders, "says Narai, "But soon you'll also be able to assign them to visual X/Y 2D displays so you can easily fade between various parameters – for example filter cut-off and frequency. You'll also be able to assign these parameters to your faders – the idea is to make the Tango into a useful compositional tool."

Smart Controls

The left hand side of the tango hosts the 'expert panel' controllers – and there are actually more of these on the Tango than the original Console. These deal with grouping and 'ergonomic spreads' i.e., fader channel assignment layouts, while the top of the screen has a 'soft' version of the Console's ARC – the MonARC. "You can display up to 100 channels in compact mode and you can just touch the channels you wish to assign to the faders in the order you want them to appear on the surface," says Narai. Channel parameters can easily be copied and injected into a new channel with a few button pushes, and a row of soft menu buttons can be assigned to display a virtual keyboard along with other functions. This, along with the dedicated mouse pad/trackball space will finally, Narai hopes, allow the user to dispense with the computer keyboard from the working space. "You can assign keyboard macros to the virtual keyboard and it should help stop things getting messy – as they can often do when you have to combine the computer keyboard with a hardware controller," he says.

"The beauty of the expansion unit is that in addition to the extra channels, you get more of the ARC displayed at the top of the screen."

Dedicated transport controls lie above the mouse pad – but even these can be reconfigured if so desired. "We've set them up so you typically get a transport section above the jog wheel with your standard settings. There's also a cursor area that can be used to zoom and move up and down lists if the DAW supports it," says Narai. Unlike some touch-screen based controllers, the Tango has quite a few physical controls in addition to those presented onscreen. "The most efficient designs makes the best use of 'muscle memory'," says Narai. "It's good when you know exactly where to reach if you want to adjust a high-frequency control, for example. One of the problems you have when you really pare down the number of physical controls is that you end up doing a lot of mental gymnastics to perform even the most basic functions. You'll be thinking things like; 'I gotta press the EQ button, select the third parameter bank, and then it'll be the fourth parameter on the left'. What we want to do is make the console take care of the gymnastics, so the user can just focus on being creative."

Smart AV also plans to release a 12-fader expansion unit later in the year. This can be placed to either the left or right of the main unit, and has sixteen programmable buttons in addition to the faders and the touch-screen." The beauty of the expansion unit is that in addition to the extra channels, you get more of the ARC displayed at the top of the screen," says Narai. Even with the expansion channels, you still have a pretty small physical footprint, so you don't need to go reaching out to adjust anything."

"The Tango is a compact, well specified and considered controller that should find a lot of friends in the post production and mixing world, and also as a useful addition to the composer's armoury. "

Conclusion

It seems that evolutionary processes are still going strong in Australia – in the music technology industry at least! The Tango is a compact, well specified and considered controller that should find a lot of friends in the post production and mixing world, and also as a useful addition to the composer's armoury. The company's focus on ergonomics and their commitment to support and upgrades will make their new baby one to watch over the coming months. Controllers like the Tango are becoming an essential tool as more and more studios move to DAW – only functionality and the easier it is to use the power of the software, the more productive the studio can be.

INFORMATION

£ GB£3,790.00, Tango 12-Fader Extn. GB£3,290.00

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Time And Place

On Location With Doctor Who

ALISTAIR McGHEE couldn't believe his luck when he was offered the chance to spend a day on set with the Daleks. Bringing a spare pair of pants, Alistair didn't need asking twice.

I remember Russell T Davies (the man who brought the Doctor back to our ever wider screens) emphatically stating in the early days of Doctor Who that the new series had to have humanity at its core. So while the exotic monsters and blazing CGI make Doctor Who fantastic eye candy, I'm sure it's the show's human heart that delivers audiences right up there with our most iconic national soaps. Eight million people is not a niche audience, Russell was spot on.

Of course big audiences equals success and success equals pressure and pressure is no respecter of departments: everyone working on one of TV's biggest hits has to be at the top of their game. And in the sound department, Julian Howarth is captain of the location sound team. And I was lucky enough to spend a day at *Doctor Who* central with Julian, Jeff Welch, and Bryn Thomas, who together captured the sound of *Doctor Who* Series' Three and Four.

Walking on the *Doctor Who* set is a definite buzz, especially when the Daleks come out to play. With Dalek dialogue booming out over the smoke shrouded set, small boys and aging *Who* fans did their best not to wet their pants with excitement.

But as the mists cleared for a moment, a glimpse of a sight almost more exciting (if that were possible) behind the wall of the spaceship/temple/galactic superstore (give me a break, it was obscured by smoke) lurked the mythical Zaxcom Diva V. It's a shame really that with such a great name that the Diva is only a multi track recorder – it could have had a great career as a *Doctor Who* baddy, or it could have featured as a control element in the Tardis that would still look cool twenty centuries from now. But more of the kit later, first let's meet and greet.

Crewing The Tardis

As I chatted to Julian Howarth about the nuts and bolts of recording location sound for *Doctor Who* I thought it telling that the first thing he wanted to talk about was his crew. His very words, "I'm only as good as my team". Jeff Welch is the First Line Boom Op and runs the floor for Julian with Bryn Thomas, hardened *Doctor Who* veteran from Series One, looking after the radio mics, swinging a boom, and playing the sweeper role keeping everything tight at the back. Julian was most insistent that as the Location Sound Recordist, the quality of what he delivered was as a direct result of having a top team on the set.

"It's a shame really that with such a great name that the Diva is only a multi track recorder – it could have had a great career as a Doctor Who baddy, or it could have featured as a control element in the Tardis that would still look cool twenty centuries from now."

It's probably too early in an article to indulge in philosophy, but I can't resist it. I found an interesting symmetry between Russell's vision about what makes TV watchable and Julian's conviction about the importance of the crew, both asserting that at the end of the day it's people that matter. I think that's most telling as there's always a temptation to put our faith in technology to the extent of overlooking the human dimension of broadcasting. But of course I digress.

Julian Howarth started his love affair with sound as a musician of no great distinction (well, that's how he described it) before taking that most well worn of paths to recording bands, and on to the high seas of dabbling in pirate radio. After university he fell for the bright lights of Manchester's Palace Theatre, and went on to tour a couple of shows before getting his break

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Simon Gogerly was recently awarded a Grammy for his mixing work on U2's "How To Dismantle An Atomic Bomb".

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in TV sound with Brookside. Which brought up one of the industry's paradoxes. On *Doctor Who*, probably TV's hottest property, you have a cushion of a top dubbing team in BH Cardiff and the opportunity to do some ADR if required. However, on a soap like Brookside you had to get twelve or thirteen pages of clean dialogue a day with no recourse to patching things afterwards.

Park Life

That's not to say of course that *Doctor Who* is a walk in the park. The show relies heavily on radio mics, and at the beginning of every day Bryn delivers a bucketful to the wardrobe department to be fitted into the the exotic mix of costumes that makes up each episode. And of course radio mics are the bane of location sound in many ways. Movement and action bring potential rustles, bumps, and knocks, even if modern RF equipment is less prone to shashing, fading, and birdies than it was a generation ago. And to make certain of the best RF performance, Julian relies on some sturdy Yagi aerials. No messing.

The radio system comes from Audio Limited with 2040 transmitters working into 2020 receivers in an RK4 rack, the advantage here being the ability to pull the receivers from the rack should a shoot move outside at short notice. The mics are

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"I was really impressed by the sound team – and the day reinforced the truth that the toys are nice, but it's the people that matter."

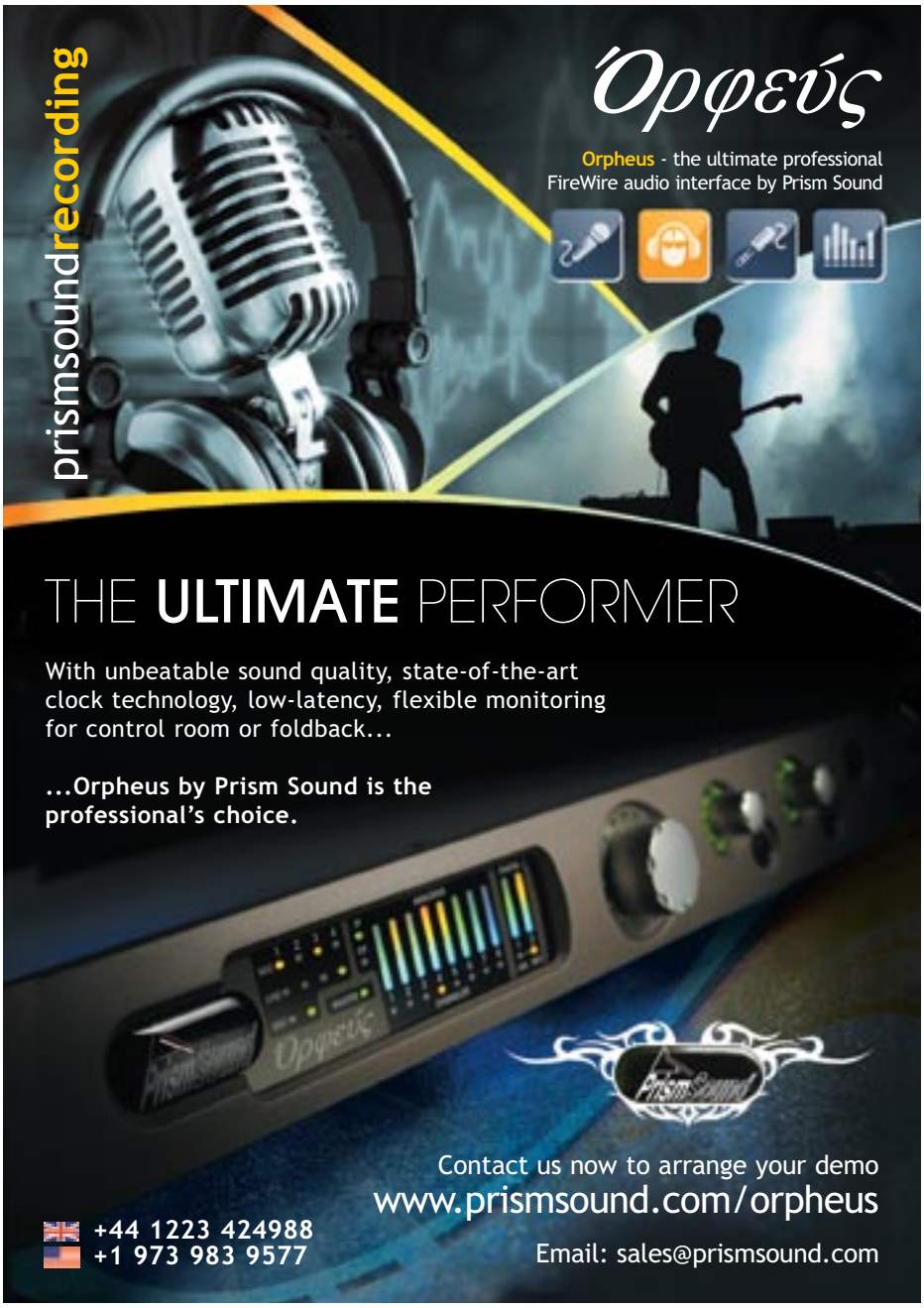
Once the radio mics are fitted the sound team set about getting a boom as close to the action as they can. Here life is a compromise between the width of the shot – much TV is shot wide and tight, making sound's life just that little bit harder. The booms are mostly fitted with Sennheiser MKH 50s, and for outside work or where a bit more "suck" is needed, Sennheiser 416s do the business. The audio from the booms is radioed back to the trolley and the Audio Developments Mixer. We talked about perspective, and Julian explained that with the 'B' camera often sneaking into ostensibly wide shots, everything really has to be as tight as possible.

From the mics to the mixer then, and here the Audio Developments 149 takes pride of place. The 149 offers a clean signal path, and a physical and electrical reliability that make them a very popular choice in location sound carts. We fell to discussing the broad brush EQ offered by the 149, but in fact EQ isn't really an issue. Julian aims for sound as 'flat' as possible and any sweetening is left to the dub where there's more time, more monitoring and a much, much broader palette of tools.

Out of the Audio Developments 149 and on to the Zaxcom Diva V. The Diva hard disk recorder offers ten tracks in total, eight with analogue inputs, and two with digital. This means Julian can offer isolated tracks of up to six radio mics alongside the stereo mix that is also fed to the cameras, though one episode required eight isos, and so two Divas were synced together for the recording. At the end of every day the rushes are burnt to DVD RAM with the isos as polywavs. One of the glories of the Diva is the ability to add notes for the dubbing team to the audio files – alongside the ability to write a custom note the Diva can store standard notes and link them to a file at the tap of the screen. An end to paperwork must truly count as a digital dividend. With the day's work finished, the DVDs get delivered to Broadcasting House Cardiff for the dub, and just in case there are any problems the files remain on the hard drive until those scenes are well and truly dubbed.

So there you have the location work flow for Doctor Who. I enjoyed a glimpse behind the veil and it was great to see great TV being made by people passionate about getting it right. I was really impressed by the sound team – and the day reinforced the truth that the toys are nice, but it's the people that matter.

Of course like all good ideas we should get a second series out of the sound for *Doctor Who* and maybe we can return for the dubbing process sometime, but I can't go without a mention of one the day's highlights, the Daleks. As we had Daleks on set, Nick Briggs was on hand to do all the voices live and to keep everyone chuckling between takes with a well observed collection of Dalek gags, or rather gags in a Dalek accent. If only I had the tape of the Dalek as bingo caller. Equipped only with a lip mic and a Moogerfooger ring modulator, Nick can hold half the universe in thrall – the icing on the cake of a perfect day. AM



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AUDIO PROFILES

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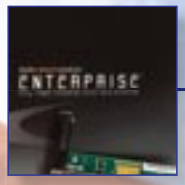
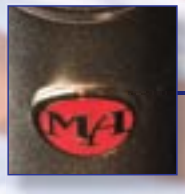
AMERICAN PROFILES – Behind The Brands

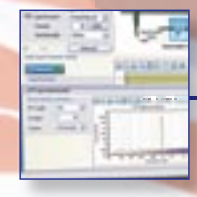
Behind every great product is a company that's passionate about the providing tools for audio professionals everywhere – whether it's processing and preamps, software, or indispensible tools. To recognise this, *Audio Media* has brought together a selection of state-side company profiles that will hopefully shed a little light on the foundations of good product design.



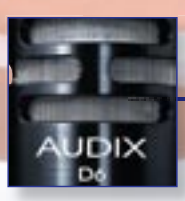
38 – Studio Network Solutions Studio Network Solutions (SNS) specialises in the development of shared-storage hardware and software solutions for the media and entertainment industries. SNS President Gary Holladay explains how it all began with just one good idea that rocketed to success.



40 – Mercenary Audio Mercenary Audio founder 'Fletcher' reveals how his Boston-based company sells and services pro audio equipment from dozens of boutique manufacturers – including its own designs – with a critical ear and a wicked sense of humour.



41 – Audio Precision Audio Precision (AP) is committed to easing productive audio testing for R&D and production line testing in consumer audio, pro audio, automotive, and broadcast industries. Chairman Bruce Hofer provides the insight on 25 years at the top of the audio analyser field.



42 – Audix Audix co-founder Cliff Castle traces the innovative microphone manufacturer's upward curve from humble beginnings to current successes.

Studio Network Solutions

It Started With One Good Idea...

Amazing things can happen when one follows a good idea. In 1998, Gary Holladay, then Chief Engineer and Studio Manager for Four Seasons Media Productions in St. Louis, Mo., built one of the first one-gigabit Fibre Channel networks for Pro Tools workstations. Fuelled by a desire for a powerful, centralised storage system, the audio production community readily accepted Holladay's 'network solution'.

His new venture, Studio Network Solutions, took off like a rocket.

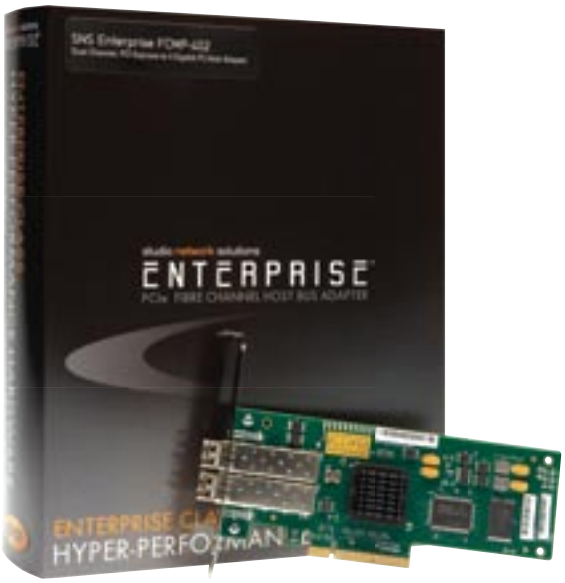
Still based in St. Louis, the privately owned company has become a leading developer and provider of technologies for production storage, networking, and workflow efficiency for the media and entertainment industries. Their software and hardware can be found everywhere from small project studios to houses of worship to the highest-end audio and video production facilities.

"We've always had a wild mix of customer sizes – literally from the smallest one-person company, to the largest multinational corporations," says President Gary Holladay. "One of our first installs was in Los Angeles – 23 workstations worth of Pro Tools on one SAN. Now, our largest install is a little over 100 workstations at a large film studio. At the highest end, we partner with Enterprise storage companies like IBM and EMC to take advantage of their storage technologies. Many of our larger customers have relationships with these corporations, so we'll often utilise our software and expertise in SAN design to offer a complete audio and video SAN solution for the entire production facility."

SNS made its widespread debut with A/V SAN™ and A/V SAN PRO,™ a storage solution that enables users to collaborate on large projects and capture, share, and edit media among multiple Mac OS X or Windows workstations over a high-throughput, low latency Fibre Channel network. A/V SAN PRO works in tandem with such applications as Avid, Pro Tools, Final Cut Pro, Pyramix and Adobe Premiere Pro. Current A/V SAN PRO users range from Sony Tree Studios in Nashville, the recently renovated, 16-room Technicolor Studios in Los Angeles, and numerous other premium television networks, top-notch animation studios, video game developers, and mid-size production studios.

"Building storage networks can easily be compared to designing a control room/studio. It takes a blend of art and science to make a room sound good for the intended use. The technology has to be molded to fit the exact needs of the studio we are working for. The tools we use for this are a combination of hardware and custom software that we've written specifically for production environments large and small."

Because Holladay and most of his key staff got their start in entertainment media production,



SNS has a unique perspective as a storage software company and can adequately serve their clients' needs.

Spotting a place in the Mac market for an emerging technology, SNS developed their own iSCSI initiator, globalSAN, which offers nearly 100 Megabytes per second throughput over a Gigabit Ethernet network. SNS then set out to deliver a new class of storage products using iSCSI. "Instead of having a seriously high-end hardware-based Fibre Channel card, for example, we can use our globalSAN iSCSI initiator, which takes advantage of the fast processors in the computer. Moving into one of our globalSAN-based shared storage systems has been a great move for a lot of audio customers because the bandwidth required for Pro Tools is so much less than video; it fits a Gigabit Ethernet connection extremely well."

For the upper end of the A/V spectrum, SNS issued Ellipse™ and Ellipse Enterprise Fibre Channel HBA, both of which handle uncompressed HD audio and video and up to 4k film. Mac users can choose from Ellipse single-, dual- or quad-port 4-Gbps PCI Express x8 (Intel and PowerPC) or PCI-X (PowerPC only) bus types, each providing up to 800 MBytes/s per port. Recently, IBM certified the Ellipse Enterprise HBA for use with their storage arrays connecting to the Macintosh. "The Mac based workstation is a serious player in production. Enterprise storage companies understand this, and rely on SNS for connectivity to their storage arrays," says Holladay.

SNS' multi-platform SAN management software, SANmp, enables computers to concurrently share massive amounts of data over high-speed Fibre and iSCSI Storage Networks. SANmp enables all users in a facility to share projects and massive media files on a storage area network. All users can capture, record, and edit directly onto the storage system, increasing efficiency and eliminating the need to copy files locally.

SNS recently raised the storage/management bar even further with Postmap, a software-based operating environment that helps all users on a network tag and locate specific files on all of their company's shared storage and removable storage media. SNS developed Postmap to serve the ever-evolving needs of the audio/video industry, which often entails collaborating on hundreds of files such as in the video game and film post-production industries.

"Postmap enables customers to index their production assets, create custom metadata, mount SANmp and standard network shares and preview files on the network, from a single interface. A Postmap user may have a stack of FireWire drives, a bunch of DVD backups, or they may have a SAN with many Terabytes of shared storage," says Holladay. "With Postmap, the indexing can be scheduled and the bandwidth taken for the index can be controlled so it does not interfere with production work on the network. Asset management software is more and more critical to the production process as clients are dealing with more digital media than ever before."

To make the process even easier, SNS created a Pro Tools plug-in for Postmap. Holladay points out, "If you're working on a session and need access to a particular file that's in your drive system or in a sound effects library, for example, you can do a search within the Postmap plug-in, inside the Pro Tools session, and then you can drag the correct files right from the search results into your timeline in Pro Tools."

That SNS will write a plug-in for one of their applications points not only to their commitment to their customers, but also their understanding of that customer's needs. Expanding on this idea, SNS recently introduced Evo, an all-in-one shared storage solution for post-production workgroups. It supports, basically, everything.

Evo integrates a NAS and a SAN into one system, offering both file-sharing and volume-sharing. Evo converges Fibre Channel, iSCSI and NAS into a single product, making it one of the most extensive products of its kind.

"Connectivity options and performance is what EVO brings to production workgroups. Instead of buying a file server, direct and network attached storage and switches etc., Evo has it all built in," says Holladay. "You can share storage over NAS and SAN, up to 10 Gigabit, and you can use multiple four-gigabit Fibre Channel ports. Using the 10-Gigabit Ethernet option in Evo, users can share that bandwidth across many separate one-Gigabit iSCSI-connected Pro Tools users. With Evo, everyone gets all the bandwidth they need, because it supports such a wide array of connectivity."

Evo, which ships with Postmap and SANmp, will also work with a customer's existing Fibre Channel storage. "An Xserve RAID, for example, can be connected to Evo and shared through the SAN over iSCSI and NAS, so if people have an investment in existing, but aging storage, they can plug it into Evo and extend the life of those older arrays."

In regards to RAID storage, Pro Tools users can use the technology for their sessions thanks to SNS' products. "Our storage systems have been supporting RAID with Pro Tools for years," says Holladay. "Even though Digidesign doesn't support RAID, we do, and have thousands of customers enjoying RAID's benefits."

To spread the word about Evo and its myriad uses, SNS scheduled an "Evo Road Show," hitting Los Angeles, New York, Dallas, and Baltimore, with plans to visit London in late July. "We spent a great deal of time getting Evo ready for production," says Holladay. "The road show is a way to train our resellers, get them excited and let our customers see Evo and all it can do."

SNS relies heavily on its network of authorised resellers, which are located worldwide, including pro audio dealers in the US, Canada, and the UK to more faraway locales such as Singapore, the Ukraine, Australia, New Zealand, and the Philippines. "Our authorised resellers are directly in touch with the customers," says Holladay. "They are constantly communicating our latest technologies."

SNS is currently gearing up for the release of SANmp 3.0, as well as a major Postmap update. The company's Ellipse Fibre Channel card has been optimised for audio and video, with advanced caching techniques designed specifically for production use. "Tailoring our software for use in audio and video production is key," says Holladay, "It was the very reason we started SNS over ten years ago and will continue to drive our company's development efforts in the coming years."

From one idea comes a broad array of products. And after a decade of phenomenal growth, SNS hasn't forgotten where they came from. "We've never gone after only high-end enterprise customers," says Holladay. "We make sure to pay very close attention to even the smallest companies that are starting out just like we did, working out of a studio in St. Louis." AM

EVO

Stats:

- 1 Gb/s, 4 Gb/s and up to 10 Gb/s Host Connect
- Up to 8 Direct-connect Fibre Channel Hosts
- Up to 32 TB per Enclosure
- File Level Access
- Volume Level Access
- User-defined RAID 0, 5, or 10 per volume
- Supports uncompressed HD

Configuration Options:

- Install up to eight more drives in Evo Base for a total of 12TB
- Add an Evo Expansion unit for a total of 24TB
- Increase Fibre Channel ports for a total of eight 4Gb/s ports
- Increase Ethernet ports for a total of six Gigabit Ethernet ports
- Add a 10Gb Ethernet port for maximum throughput

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Mercenary Audio

Hard Work, But Also Hard Fun

Anything but conventional, and nothing but the best – Mercenary Audio knows how to get people talking.

Mercenary Audio sells and services pro audio equipment from dozens of boutique manufacturers, including its own designs, but does so with critical ears, a generous customer service policy, and a wicked sense of humour that's gotten Mercenary into trouble on more than one occasion.

Fletcher (one name only, please) founded the Boston-based company in 1989 as an equipment brokerage firm, which soon morphed into an outfit that refurbished and sold vintage gear. When the vintage equipment market became a less profitable endeavor, Fletcher aligned with manufacturers that built equipment "...as good, and in many cases superior, to broken vintage stuff," he says. "We became a leader in finding new manufacturers and introducing them to the world."

Mercenary Audio's methods of introducing itself and its products have generated as much, if not more, attention than the products themselves. If its Harley Davidson-inspired logo and 1950s pin-up girls on its website don't turn heads, its antics will. At the 1995 AES Convention in New York, Fletcher convinced a colleague to drive around the show floor in a Harley golf cart with their logo and the slogan, 'Analogue is Back and It's Pissed', on the side, then in '96At the '96 Convention, they harpooned a popular digital storage device and cheap sounding console, calling the sculpture "S*#t on a Stick". At the 2006 Tape Op Conference in Tucson, Ariz., their t-shirts bore a slogan not fit for print – conference organisers confiscated them until after the show.

Such publicity stunts might get people talking, but Mercenary's product line is what generates repeated interest. Everything from AEA ribbon mics and API mic pre's, to Vintage Design channel strips and GML EQs can be had through Mercenary's extensive website, all rigorously tested and Mercenary approved. "The equipment goes through long, hard listening tests," its website states. "If it passes those, then it goes to technical. If it gets through technical, and we're satisfied that it's well built/designed, then we abuse it. We'll put it in a road case and toss it around, just like a shipping company or IATSE stagehand might do." Once an item passes its tests, Mercenary Audio doubles the manufacturer's warranty.

Several manufacturers also use Mercenary Audio as their U.S. warranty repair center, which was originally set up to maintain their studio, named the Methods and Applications Laboratory ('Meth Lab' for short). Once the shop closes at 6pm, the studio, with its highly modified Class-A discrete Yamaha desk, serves as the recording site for Fletcher and his employees' various productions.

And since nearly everyone on staff are engineers, select manufacturers often collaborate with the company to create 'Mercenary Editions', which results in either a new twist or a complete overhaul on an existing product.

"About a decade or so ago, I had commented to a manufacturer many times that I thought one of their products was absolute crap," says Fletcher. "They threw down the gauntlet and said, 'Can you do better?', so we designed a piece for their line that was similar in nature to the piece that I hated, but suited my work pattern and sense of aesthetic. Years later the unit is still in production and selling great numbers." Manufacturers such as Drawmer, Crowley and Tripp, Great River, and Pendulum Audio, all have Mercenary Editions to their name. "And the only compensation we gain from that is having the Mercenary Edition logo on the unit," says Fletcher, "No royalties, not even a free unit."

In 1995, Fletcher consulted with Empirical Labs on their popular EL-8 Distressor. He also came up with the model number. [Empirical Labs founder] Dave Derr said, 'Shouldn't we call it the EL-1, since it's our first product?', I said 'No, after two years of passing this thing back and forth, I'm totally *elated*.'"

These days the motorcycle-riding audio authority is equally elated about Mercenary's own MFG KM-69, which is similar in nature to a Neumann KM-84, but with a clarity that makes it ideal for hi-hats and acoustic instruments, among other functions. "The idea was to create a mic that would give me a hi-hat sound that I liked," says Fletcher. "The KM-69 turned out to have a whole slew of other uses, as well."

Mercenary's flagship microphone, like most of their inventory, is available in the U.S., Europe, and other international markets. The company has catered to the European market since day one by both seeking out European manufacturers and working to establish global pricing.

"When the Euro to US$ exchange rate was in favor of the dollar, we worked to help European manufacturers establish global pricing to prevent grey marketing, which undermined their U.S. distribution network," says Fletcher. "Now we're trying to help U.S. manufacturers establish global pricing so as not to undermine their global distribution network." Mercenary's manufacturing arm currently has distribution in Australia, France, the UK, Sweden, and the remaining European Union.

No matter what their address, customers can get advice and have questions answered by a real person during regular business hours – just be wary of calling during cocktail hour. "Our COO, Jay Fitz, has called us a small drinking company with a large audio problem," Fletcher jokes. All kidding aside, "We all work really hard and are totally customer-oriented, but we play pretty hard too." AM

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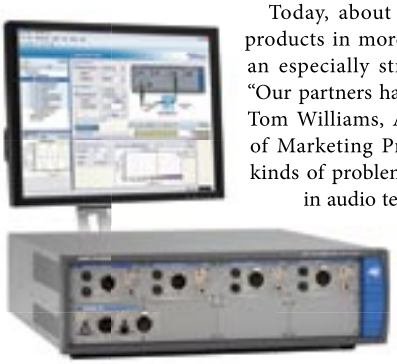
Audio Precision

25 Years As An Industry Standard

Most professional, consumer, and broadcast audio manufacturers spend considerable time, money, and effort to ensure that their products meet the highest quality standards and produce and/or reproduce the most accurate sound possible. As R&D departments design, build, and test their audio products, they have to trust that the equipment they use is absolutely precise. Audio Precision, arguably the leader in audio test and measurement equipment, has nearly 25 years of experience in exceeding their customers' expectations with their audio analyser hardware, software, and other accessories.

Continuing their trend of raising industry standards, Audio Precision issued the APx Series, an efficient next-generation audio analyser platform that offers one-click measurements, two- eight- or 16-channel model configurations, and an automated measurement sequencer and continuous sweep technology that can derive 14 measurements in as little as seven seconds.

The recently introduced APx520 and 525 analysers both offer two balanced and two unbalanced analogue inputs and outputs, while the APx525 comes with 192K digital inputs and outputs. Both models generate signals down to 0.1Hz.



Audio Precision's latest, and perhaps most groundbreaking new development, however, is their new HDMI option module for the APx585, making it the first multi-channel audio analyser capable of testing HDMI and Blu-ray audio. Engineers working with HDMI can now use the APx585 to measure HDMI audio quality on devices such as surround sound receivers, set-top boxes, HDTVs, and DVD and Blu-ray disc players.

"There are so many protocol standards that HDMI can support in audio and video," says Hofer. "HDMI literally asks the device that it's talking to, 'What are you capable of reproducing? What format should I send you the data in? Do you want your audio in stereo, Dolby 5.1, Dolby 7.1, HD, et cetera?' Before we released this HDMI interface, there had been no way that a manufacturer could systematically check its product for functionality against all of these different standards."

Current Chairman Bruce Hofer and fellow engineers Robert Wright, Bob Metzler, and Rich Cabot, founded Audio Precision in 1984 after collaborating in the labs of test and measurement equipment manufacturer Tektronix. "We had developed a couple of audio products for Tektronix and they were immediate hits," says Hofer. "Following their business model, the company decided not to do any follow-up products. That left us as a team thinking, 'What's next?' Do we shake hands and go our separate ways, or take this audio thing to a different realm? We chose the latter, and that became the genesis of Audio Precision."

At the 1985 NAB Convention – six months after incorporating – Audio Precision debuted their first prototype. Within a year, they were in the black. Within two years, they had become an industry standard.

"We offered a very cost-effective solution to automation," says Hofer. "We were the first way most companies automated their production tests in the world of audio. We also set out to reach an international market. We signed our European distributors at that first NAB show."

Today, about 20 distributors carry AP products in more than 100 countries, with an especially strong presence in Europe. "Our partners have extensive training," says Tom Williams, Audio Precision's Director of Marketing Programs. "They know the kinds of problems that our customers face in audio test and are doing a good job of solving those problems as well as providing the right equipment."

To further enhance technical support in Western Europe, Audio Precision recently set up an independent service centre in the Netherlands. "We have replacement modules and calibration capabilities," says Hofer. "Anywhere in Europe it's a quick overnight shipment to get instruments to the service centre for quick repair. That's been very successful and very well received." The company's US headquarters in Beaverton, Oregon, serves as the main technical support and service centre, although many AP's international distributors offer adjustment and repair services for equipment sold in their regions.

Audio Precision's broad customer base includes manufacturers in recording and broadcast, A/D and D/A chip design, computer audio, automotive audio, home entertainment, personal stereo, and telecommunications. Audio Precision's instruments are paramount for quality control and testing of a manufacturer's products; therefore, their own quality control is crucial to their success.

"We have three layers of tests, staringt at the modular level," says Hofer. "We do most of our own internal final assembly. We test the modules first; then they're assembled into complete instruments and tested again. After that, the products go through our automated calibration lab."

Accredited by American Association for Laboratory Accreditation (A2LA) under ISO/IEC: 17025 for equipment calibration, all AP products ship with a complete, certified calibration report. "We go to a lot of pains to check our own equipment because people fundamentally trust us," says Hofer. "Manufacturer test measurement equipment is accepted as the ultimate reference, so we make very sure that we deliver that kind of quality."

As audio manufacturers continue to develop new technologies, the equipment used to test their wares develops, as well. "The world of test and measurement is certainly not stagnant," says Hofer. "Technology is always moving forward and bringing us new challenges and new things to measure."

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Audix

Audix Microphones: Consistent Innovation

Audix is an innovative microphone manufacturer that has consistently raised the bar with its successful line of products, including the award winning SCX-1, SCX25-A and D series studio microphones, and the top performing OM-Series vocal mics, the Micros, the VX10, and i-5 for sound reinforcement and installations.

The following is a 'Snap-Shot' Interview with Cliff Castle – co-founder of Audix.

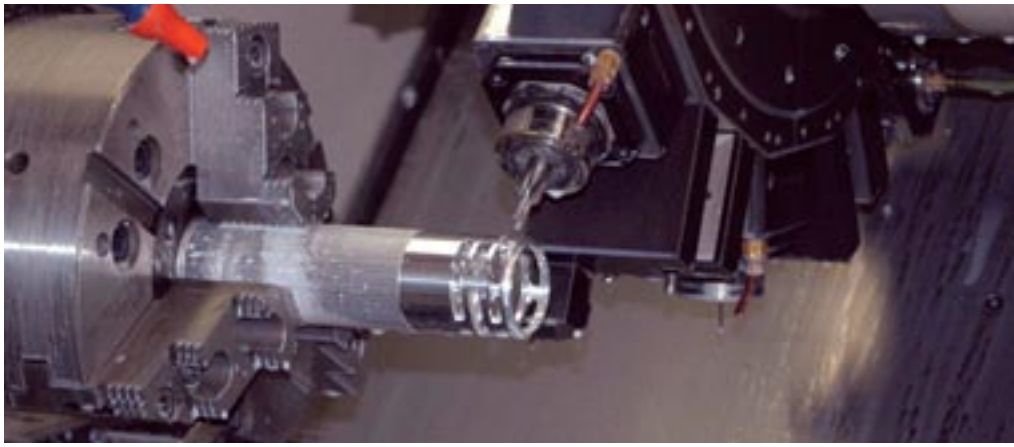
How did Audix get its start?
Audix had its humble beginnings back in 1984 in Redwood City, California in a 'suite' of offices totaling about 300ft²! Initially, we were set up as the distribution arm for Audix Japan, a microphone company who was manufacturing strictly for the domestic market. The microphones were good, but not good enough to compete with the industry standards of the day. One thing led to another and we started redesigning the microphones and improving the performance characteristics. The first two years were pretty painful, but, by 1986, we introduced our first high-level vocal performance mic, the OM 1, which received very positive magazine reviews and made its way into high profile users including the Beach Boys, one of my all time favourite groups.

The OM series vocal mics are stronger today than ever. How has Audix maintained this success?
We developed our own capsule design that featured 'VLM' technology, which stands for 'Very Low Mass'. These lightweight diaphragms are able to react more quickly to incoming sound waves, which result in a more natural, accurate sound with better transient response. This diaphragm design, along with the hypercardioid design of the polar pattern, provided unprecedented gain before feedback, still unparalleled to this day.

Artist and engineer support has also helped. We happened to be paying attention to the 'grunge' groups emerging out of the Northwest in the early 1990s. I demoed the OM7 to Dave Rat (Rat Sound) who was providing sound for two unknown groups at the time – Pearl Jam and Red Hot Chilli Peppers. He pretty much flipped out when he heard the gain before feedback of the OM7 in the monitors. He thought there was some type of voodoo going on. Before we knew it, the OM7 became the microphone of choice for just about all the groups in the grunge scene – and fortunately for us, the groups hit the mainstream. By 1995, another of our mics, the OM5, made its way into the hands of *The Tonight Show*, *The Late Show* and *MTV Unplugged*, as well as many artists such as Alanis Morissette, Bonnie Raitt, Bruce Springsteen, and Crosby, Stills, and Nash – all of whom continue to use their Audix mics to this day.

Audix is now established as a leading manufacturer in drum and percussion mics – how did that come about?
Being a musician helps. I realised that drummers and percussionists, the guys who provide the heartbeat for any musical content, were being neglected as far as mics specifically designed for their applications. The Sennheiser 421, which we recognised as a great mic, had become the standard percussion mic for pros. The downside to that mic is that it's fairly big, cumbersome, and expensive. So we came up with the D series – application-specific mics for drums. Machined at Audix out of high-grade aluminum barstock, these mics are compact, accurate, able to handle high SPLs, and cost effective. After a few years, they gained widespread recognition, and with the most recent addition of the D6 and the i-5, these mics have become really good, dependable tools for a wide variety of instrument needs.

Audix also continues to develop interesting condenser mics. Any tricks up your sleeve that we should be on the lookout for?
You already know about the SCX25-A, an improved version of our formidable large-diaphragm condenser mic that is ideal for acoustic instruments, overheads, and vocals. The Micros are the world's smallest standalone condenser microphones with an integrated mic preamp. The 50-inch carbon fibre



Audix Drum And Percussion Microphones – Leading The Pack

MicroBoom incorporates the Micros in a way that makes it the ideal solution for choir miking without having to hang mics from the ceiling. And our latest innovation is the VX5 handheld condenser vocal mic with pad and rolloff. Keep an eye out for that mic; it is bound for stardom!

Audix, with the introduction of the D-series dynamics in 1993, created a new category of microphones specific to drums and percussion. Shortly after, Audix expanded this concept to include pre-packaged sets of microphones in various configurations, creating yet another category for 'drum mic kits' which is now popularised by many other brands following suit.

With the more recent introduction of the D6 and the i-5, Audix configured the DP5a, DP7, and the DP Elite 8, all of which feature the best of the best, and provide high performance and excellent value. In fact, the DP7 was bestowed the prestigious MIPA international award of 'Best Drum Microphones' of 2007, an award voted on by 107 magazines representing 25 countries.

The DP7, as the name implies, consists of seven microphones and is perfect for miking a five piece kit for both live and studio applications. At the heart of the mic system is the popular D6 dynamic microphone for kick drum, characterised with full, robust sound with clarity and attack. For snare drum, it's the i-5, a perfect complement to the D6. The i-5 not only provides clear and natural sound reproduction, it is extremely durable and capable of withstanding the occasional and unavoidable 'stick hit' during the course of a gig. For rack toms, there are two D2 dynamic microphones. The D2 is simply described as the 'king of toms' with an ability to capture all the subtleties and overtones of 8–12" toms.

For floor tom, there is the D4, unrivalled in its ability to recreate the extended response of a low frequency drum with extreme accuracy and detail. For overheads there are two ADX51 'pencil-style' cardioid condenser microphones with pad and roll-off. The ADX51 captures the cymbals and ambient sound of the full kit, without picking up too much 'bleed' from the other instruments on stage. Additionally there are four D-Vice spring-tensioned rim mounting clips which eliminate the need for mic stands for snare and toms. All mics and accessories are conveniently packaged in a foam lined aluminum case for safe keeping. List price is $1,747.

A cost-effective variation of the DP7 is the DP5-A, which includes everything except the ADX51 overhead condensers. This package of mics is valued at $1,149 MSRP.

And for those artists and engineers looking for the ultimate miking solution without compromise, there is the DP-Elite8. This package is configured with the same basic five microphones found in the DP5A, with the addition of two SCX1-C cardioid condenser microphones for overheads and an SCX1-HC hypercardioid for high hat. The DP Elite8 is priced at an MSRP of $2,569.

AUDIX MICROPHONES

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Powered Plug-ins

Is your DAW not doing enough for you? If you're running out of tracks, try powering-up your plug-ins. RICHARD WENTK rounds up the field.

ProTools has defined the powered plug-in market with its TDM standard, but TDM plug-ins come with a significant price premium, and so there's been a trend among other manufacturers to release products that fly under the TDM radar and are aimed at complimentary markets. If you're running out of native processing power but don't need an über-DAW with hundreds of tracks, you can slot in one of these units and take the load off your CPU. At the same time, you can add a high end gloss finish which native effects might struggle to provide – although the difference between a generic EQ and a good EQ has been shrinking as DAWs have developed, so this isn't the obvious given it might have been ten years ago. Emulations of classic analogue boxes are an obvious element in the USP, but it turns out that some of the newer all-digital effects can sound at least as good. The convenience factor of having multiple instances of an effect can trump the retro-fad appeal of having a virtual vintage compressor in your virtual rack, with virtual metering and virtual controls, controlled with a not so virtual mouse.

Is there a catch? None of these products are entirely issue-free. While a couple of products offer PCI and PCI-E card versions which can slot into a PC or Mac, the rest use Firewire 400 to connect the processor to the host. This can cause problems if you're already using a Firewire 400 port to connect to an audio interface. It's easy enough to slot an extra F400 card into a PC, but laptop owners have more limited options. Even though the F800 has never quite taken off in the mass market, it would have been useful to see it being offered as a high bandwidth option.

Latency is always significant. It's impossible to use most of these plug-ins in a live situation, and some attitude adjustment may be necessary if you're trying to mix with them in real time. Also, a few systems have inexplicable quirks and limitations. For post applications, it's worth keeping in mind that most of these effects are stereo only – surround support is very rare. Most of these units are designed for music mixing rather than post, but aside from the lack of surround features, that's not necessarily a bad thing. If you need to sweeten a voice-over, tighten up the dynamics in a radio bed, or apply surgical EQ to a sound effect, you'll find they can sound better and be more versatile than a more familiar EQ tool might.

Just like the real thing – a couple of the knobs are the wrong way around.

SSL Duende

Duende is SSL's attempt to make its high-end console technology more affordable. And mostly it succeeds. The range includes three products – a PCI-E card, a half-rack mini-processor with half the usual compliment of DSPs that can be unlocked to offer the full set, and a 1U rack-mount processor. The Mini processor is bundled with the channel strip plug-in, while the PCI-E card ▸

THE REVIEWER

Richard Wentk is the owner of Skydancer Media, a digital production company providing sound, image, design, and consultancy services to various clients in London and the West Country.

JEFF MARTIN

CHOOSES THE X-48

TASCAM

PHOTO BY EJ CARR

JEFF MARTIN IS A SINGER/SONGWRITER WHO WAS RAISED IN ONTARIO CANADA AND AS A MEMBER OF THE CHART TOPPING BAND THE TEA PARTY PRODUCED SEVERAL CRITICALLY ACCLAIMED ALBUMS. JEFF DEVELOPED A FASCINATION EARLY ON WITH EASTERN TUNINGS AND INSTRUMENTS, A PREOCCUPATION HE LATER INDULGED WITH GREAT SUCCESS WITH THE TEA PARTY AND RECENTLY HIS SOLO PROJECTS. JEFF IS CURRENTLY WORKING ON HIS NEW ALBUM AT HIS PROJECT STUDIO IN EIRE WHERE THE TASCAM X-48 DIGITAL WORKSTATION IS CENTRE STAGE. TASCAM ARE PROUD TO HAVE THIS HUGLY TALENTED GUITARIST/PRODUCER ENDORSE OUR PRODUCTS AND FOR THOSE WHO HAVE NOT HEARD OF JEFF YOU ARE IN FOR A TREAT. BE SURE TO CHECK OUT HIS WEB SITE FOR SOUND BITES AND TOUR DATES: WWW.JEFF-MARTIN.NET

FOR MORE INFORMATION CALL GARY ON 01932 - 438845 OR VISIT WWW.TASCAM.CO.UK TO READ ALL ABOUT THE X-48

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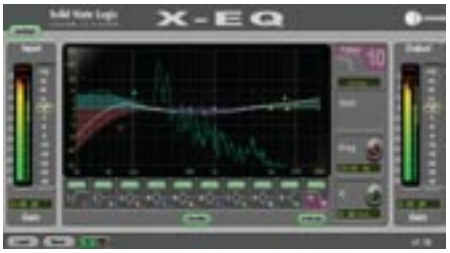
and the rack-mount versions add the Bus Compressor. Optional extras include a 10-band parametric EQ called X-EQ, a more advanced compressor called X-Comp, and a drum-strip with dynamics processing called, unexpectedly, Drumstrip. The entire range uses the same core hardware and the same software wrapper. Ten hour trial versions are supplied, but the clock is only running while audio is being processed, so this is more generous than it sounds. Duende can be doubled up to offer twice the processing from a single chained Firewire connection, subject to the usual caveats about only attempting this on a dedicated port.

Installation is fairly painless. The external boxes are silent and easy enough to park out of the way. Software installation is slightly more complicated. You'll need to register to get the inevitable software update, and buying the optional plug-ins requires an authorisation from SSL, which isn't currently done live on the website. Once running, the plug-ins can be pulled into the usual VST or RTAS slots in your DAW.



Ten bands of definable filtering.

Although Duende offers the smallest plug-in collection overall, and although it's unlikely to ever expand into more adventurous areas, the sonic utility of this set is still impressive. The Channel Strip is versatile and powerful, packing in E and G series three-band EQ, a compressor and expander, and lo-pass and hi-pass filters. The sound is distinctive, and while it's easy to lose the sweet spot and turn the input into a grainy fry-up, when it's in the zone it's very musical. This is even more true of the Bus Compressor, which has a total of four controls but adds depth and movement to almost any mix.

"Although Duende offers the smallest plug-in collection overall, and although it's unlikely to ever expand into more adventurous areas, the sonic utility of this set is still impressive."

As an effect it either works or it doesn't – changing the settings won't improve it much if it doesn't sound right immediately. But when it works it's very, very good. Of the remaining plug-ins, the EQ is smooth and ideal for creative and surgical applications. The compressor and drum-strip are less essential. The former includes a frequency bleed feature that mimics some of the sound of vintage compressors without trying to emulate them – it sounds good, but not spectacularly different to a typical DAW comp. The drum-strip adds gating and envelope shaping, and is a good way to add life to tired loops.

A limitation of Duende is that there's currently no console-style inter-track sidechaining. But Duende's most obvious Achille's heel doesn't reveal itself until you try to bounce down/freeze/mix down/render. At the time of review, you can't – if you want to save Duende's output, you have to play it out in real time and record it. This is an unfortunate failure on an otherwise impressive product, especially considering that this will usually dither down data to 24 bits from a 32-bit source. SSL are aware of the problem, and Duende is being 'continually developed.' But there's no ETA for a fix, and after a couple of years on the market it's disappointing that it hasn't been addressed more aggressively.

If you can live with that limitation, Duende is one of the best-sounding plug-in suites. The sound isn't always subtle, but it is musical, and has applications from music mixing to post. It's possibly best to take SSL's marketing pitch at face value and think of Duende as a console in a rack. The absence of delay and reverb means it's not a one-stop effects factory, but the sound will help improve the production values on any project.

£ Hardware: £399 to £850+VAT
Extra plug-ins: £199 to £295+VAT
Information and Distributor
Ⓦ www.solidstatelogic.com

Focusrite LiquidMix

Focusrite's LiquidMix arrives as a remote with a built-in processor card, connected via Firewire. The base model offers up to 32 channels of processing, but as the sample rate goes up this shrinks very quickly, and at 192kHz you're left with a single stereo channel. The remote offers an impressive multi-coloured fruit-machine

lightshow as it initialises. When it's working, this settles down to offer bargraph displays of input and output levels, and compression dB. After a surprisingly short time the remote starts to disappear into the background – you'll find yourself reaching for it and making changes without the slight feeling of permanent distraction associated with editing settings on a screen with a mouse. One problem I found is that with multiple plug-in instances in separate windows, it's not always obvious which instance the remote is controlling. Some indicator numbers would fix this – for now all of the instances look identical, which isn't ideal.

The LiquidMix plug-in looks almost exactly like the LiquidMix remote, with added graphs.

Sonically, LiquidMix offers an impressive selection of emulated effects. Even though the functionality is limited to EQ and compression, it feels like a product that has been designed for studio engineers, rather than bedroom part-timers. Aside from Focusrite's own-name processors, the names of the emulations are hinted at rather than being listed explicitly. This works well, because you're more likely to concentrate on the sound than on the retro-wow excitement of using a virtual SNESL 5190LE Dead Spider Edition. There's less tweaking for the sake of it, and more leaving the sound alone once it's good enough for the job.

The sound itself is an unexpectedly versatile selection of compression and EQ responses – each instance of the plug-in offers one EQ and one compressor. There's something for everyone here, from grainy bright transistor effects to beefy valvification. The plug-ins have a distinctive precision and body which is sweet without being thin, although this starts to become less convincing near clipping. The emulations may not be as gigantic as the most obese valve-based analogue effects, but they make it easy to add character and colour without creating a low-mid swamp.

As one of the more affordable options, there's a great deal to like about LiquidMix. It's not a bedroom studio magic fairy dust machine, and it needs experienced ears to get the very best from it. But it feels and sounds like a professional tool – a remarkable achievement given the inclusion of a remote, and the low price.

> "It's not a bedroom studio magic fairy dust machine, and it needs experienced ears to get the very best from it. But it feels and sounds like a professional tool..."

£ **£356+VAT**
Information
Ⓦ **www.focusrite.com**
Distributor
Ⓦ **www.focusrite.com/store_locator/distributors/UK/**

TC Powercore X8

Powercore has been available for around a decade now, and in its latest X8 incarnation it packs eight DSP cores into a 1U rack-mounted box connected over Firewire 400. X8 runs the latest version of the DSP core software, which allows sidechaining and improved metering. The eight cores are impressively powerful, although loading depends on the complexity of the plug-ins, and varies from around 20% to 100% per core.

Powercore's main attraction is its huge range of optional plug-ins, which is by far the biggest you can find outside of the TDM market. The list appears in the plug-in status window as a handy reminder that you really want to buy them. Most are offered as trials, limited to twenty hours for the majority, and just four for the more exotic and high end sets – so there's a feeling that the status window is as much an ad space as a status indicator. Confusingly, the standard bundled plug-ins don't appear in this list, so you can't immediately see which are free to use – unless you keep a copy of the back of the box. The bundle includes Denoise for dynamic noise reduction, Filtroid and Character for generic enhancement, 247C and Tubifex for analogue compressor and amplifier simulation, a selection of standard compression and EQ plug-ins, a couple of reverbs, and Master X3 Finalizer. This is plenty to get you started, and many of the plug-ins have a characteristic sound, which is clean and precise, with a hint of high end digital shimmer. Where there's fullness, it's a very digital high-resolution 32-bit fullness – not unattractive, but very different to the analogue emulations offered by the competition. They may

Powercore's Fabrik C – not a typical channel strip. Not sure what SLGC do?Neither are we.

not be your first choice if you're trying to turn a mix into clip-heavy grunged-up analogue mud, but you can still use them to digitally bulk up the sound, which will make them popular for post. Visually, there's a mix of interface approaches, from retro-TC styling, to virtual rack panels, to experimental interfaces, to minimalist M5000 and M6000 numerical layouts. This can feel confusing. It's hard to see how TC could enforce interface standards on third party plug-ins, but TC's own interfaces could be more consistent and approachable – and the channel strip is the only plug-in I've seen where you push a virtual button to turn off an effect.

The optional plug-ins extend the range considerably. Prices vary from €215 for the simpler plug-ins like the Assimilator EQ curve matcher, to €995 for the MD3 stereo mastering tool, and €1,495 for the restoration suite. A complete set including the Powercore hardware will bring the total to around €9,000/£6,500. Of the optional extras, the Fabrik C compressor scores points for sounding good and having a quirky but intuitive interface, and Harmony 4 is one of the better multi-part vocal harmonisers.

I was less convinced by MD3 or by the Restoration Suite because similar features are available elsewhere.

There were occasional communication failures between the card and the PC, and one or two other distractive quirks. If you boot your DAW without Powercore connected, the installed plug-ins complain in the status window. The window isn't cleared between sessions, which creates a pile-up of useless messages – an unapologetic nitpick, because it's something the competition manages to avoid. I also had problems with the Virus softsynth demo, although TC's tech support quickly worked out a fix.

Overall I was left feeling slightlyperplexed about Powercore. The best plug-ins are industry leading and offer a unique sound, but the less successful ones may not give you much that your DAW can't. More of the former and less of the latter would be good, because this isn't a budget product, and it seems to be aiming for the lower end of the ProTools DSP farm market. It's certainly a different take on the powered plug-in market and has a lot to offer, especially for high end users – but it could do with being a little less quirky.

£ Hardware: £850+VAT
£ Plugins: £130-£1000+VAT
Information
Ⓦ www.tcelectronic.com
Distributor
Ⓣ Call 0800 917 8926 for info

Waves

Waves plug-in accelerators are a relatively recent arrival – they started shipping three years ago – and are available in two form factors. There's the APA32, which is a very noisy 19" rack mount box designed to go in a machine room, and the quieter half-rack APA-44M, which you can park on your desk. Although the APA32 is the bigger of the two, it's also the cheaper and less powerful alternative.You can run up to eight of either from a host. They can also be networked together via an Ethernet switch, so processing power can be shared out among a suite of hosts. Because the connections rely on Gigabit Ethernet there's no Firewire overhead.

The APA32's plug-ins look exactly like the standard Waves plug-ins – as with this IR-1 reverb.

Only a selection of the Waves plug-in range is available in APA format. According to Waves there's no reason to produce APA versions of plug-ins that barely tax the host – although this isn't entirely convincing, because the host can always spend its time doing other things, and 32

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instances of a powered-up EQ can sometimes be more useful than five instances of a convolution reverb. Whatever the rationale, Waves suggest that the system is happiest running beefy demanding plug-ins like the L3 Multimaximiser, IR1 convolution reverb, Q-Clone, and the Waves Linear Phase mastering processors. Mac users can also accelerate the IR360 convolution reverb.

If you already own these plug-ins, upgrading them to the APA format requires an un-installation, download, and reinstallation. The accelerated versions are already covered by your existing Waves license, so this doesn't cost any extra. One installed, communication is handled by a Netshell application, which can be customised to minimise buffer times and latency, and also shows the available CPU power, memory, and network bandwidth. I had some issues getting Netshell to work, but it eventually sparked into life. The APA-enabled plug-ins now appear in your VST and RTAS list with an added 'net' tag, so it's up to you to decide when you want to use the native or accelerated versions – there are no restrictions on how these are combined.

> "Waves suggest that the system is happiest running beefy demanding plug-ins like the L3 Multimaximiser, IR1 convolution reverb, Q-Clone, and the Waves Linear Phase mastering processors."

Unfortunately the APA32 isn't spectacularly powerful. Because most of the competitors' plug-ins aren't available in native format, there's no way to compare relative performance. But a direct comparison is easy for Waves plug-ins; the APA32 can run up to five instances of the full IR1 reverb. This may sound impressive considering that a TDM Accel card can't run a single instance, but a slow dual-core host PC clocked up ten instances at 64% CPU while also playing back ten tracks of samples. So a quad-core system will lose a single APA32 in its rear-view mirror, while an eight-core 3GHz Xeon system will eat a rack of eight APA32s for lunch. The APA-44M is around a third as powerful again as the APA32, but this still isn't enough to make it stand out as option.

Waves seems to have realised this. Only older 5.x and 4.x plug-ins offer APA acceleration. The latest 5.9.x series doesn't. So the current status of APA32 isn't settled – it's not quite discontinued yet, but heavy dealer discounting and the lack of support for it in the latest release of Waves plug-ins suggest that it may be discontinued very soon. If you don't mind running plug-ins which are a version behind the latest update, you can pick it up as a relative bargain. If you're finding your host is maxing out, the APA32 may, ironically, be a good way to offload many instances of relatively undemanding plug-ins, like the Renaissance Channel. The shared networked processing feature could be attractive too, in some settings. In fact it would be interesting to see Waves release the Netshell component as a separate product, making it possible to create custom processing farms from cheap PCs. But there's no suggestion that's likely – and in the mean time it's not clear at the moment what the future holds for the APA32.

£ **£500+VAT**
Information
Ⓦ **www.waves.com/content.aspx?id=336**
Distribution
Ⓦ **www.sonic-distribution.co.uk**

UAD

The UAD interfaces lean heavily on rack emulations – even when they're completely original, as in this Precision Multiband.

Universal Audio's UAD-1 card is possibly getting a little dated now. While plug-ins continue to be developed at a furious rate, the core hardware hasn't been updated since the original release date, and with a single DSP core it's a long way from being the most powerful product on the market. Instead of developing multi-DSP versions, UA have repackaged the hardware into PCI, PCI-E, and ExpressCard formats. There's no boxed Firewire version, but to make up for this, UA offer an ExpressCard model – a good laptop choice which can also be used on the desktop via an adapter called Extenda.

A maximum of four cards in any format can be used in the same system. So perhaps a more positive spin on the UAD approach is that you can buy as much or as little power as you like and upgrade to extra cores later. Unfortunately more modern PC designs are minimising the slot count, so this may not work for everyone, and a multi-DSP alternative would still be welcome. For now, plug-ins share themselves out across the cards automatically once they're authorised. When you add new hardware, a simple and free online reauthorisation extends this to your new cores.

UAD products are sold as bundles of two kinds – a fixed collection of plug-ins, or hardware+voucher bundle that you can spend on your own customised collection. The entry level ProjectPak includes the 1176SE compressor, the Pultec EQP-1A EQ, RealVerb Pro, the CS-1 channel strip, and the Nigel guitar processor. There are also generous fourteen-day trials of all of the other plug-ins in the collection. After that, picking a bundle becomes more of a challenge for the indecisive. There's no simple 'give me everything' option. The ExtremePak comes closest but only offers around two thirds of the available plug-ins. According to UA this is because new plug-ins are released regularly, but it shouldn't be too hard to offer an annual subscription that covers all releases for that period.

But do you want all of the plug-ins? UA's speciality is emulations of vintage hardware, and the range covers classics like UA's own hardware range to more specialised products like Roland's Dimension D and RE-201 Space Echo. There's also a pack of Neve emulations, a version of SPL's Transient Designer, and a Precision range of processors. Unlike the Focusrite LiquidMix, which offers a single interface for all of its emulations, the UA approach is to recreate accurate panel graphics where possible. This can be distracting – it's easy to waste time trying a different processor, fiddling with the settings, trying a different processor…

Sound quality is proverbially subjective, but I found myself thinking that the sound of some of the UAD plug-ins wouldn't necessarily be one I'd reach for first. There was a distance between plug-ins that sounded like they could become go-to processors – like the Helios Type 69 EQ – and others like the Cambridge EQ, which seemed to have more limited utility. A likely way to maximise the benefit from the UAD system is to spend a day trying out all of the processors to get a feel for their sonic flavour, and then picking a personal best-of list. Stand-outs for me included the Roland range, the Nigel suite, the Helios EQ, and the Plate 140 reverb. I was least excited by UA's own emulations of the 1176LN and the LA2A – they may be useful on selected solo material, but perhaps not so much as a bus compressor for post, especially considering the alternatives offered by the competition.

But results depend on musical applications, and these emulations are very popular with some users, so this is a very subjective view. Given that a ProjectPak costs just £200, and comes with two week trials of everything plus a $150 voucher, the UAD system is affordable and powerful, and well worth a punt. Buying a couple of cards and a good selection of plug-ins will push the cost to over four figures – but in context, that's still very competitive, considering the features and the sound. The UAD system may not suit everyone's needs, but it has the potential to make some mix engineers very happy.

£ **From £200+VAT**

Information

Ⓦ **www.uaudio.com/products/uad-dsp_menu.html**

Distributor

Ⓦ **www.hhb.co.uk/hhb/uk/source/**

The Bricasti Design Model 7 provides the highest level of musicality and ease of control imaginable in a processor dedicated to the task of reverberation.

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The new Bricasti Design Model 10 remote console is a dedicated hardware remote Controller for use with the M7 stereo reverb processor, it can control up to 8 units.

The people team behind Bricasti, Brian Zolner and Charles Dowdell, have been in the reverb business for a long time, with many years experience working on the cutting edge of reverb technology design.

The design philosophy of the Model 7 is a carefully considered statement of Bricasti's vision of what the evolution of reverberation processing in its most classic form can be.

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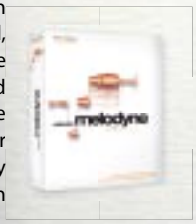
Summer Hits: Mid Year Gear Picks!

Break out the strawberries; for summer's here, and with it comes *Audio Media's* pick of the crop – not of the summer fruits variety, but rather a tasty selection of the juiciest gear releases of recent months.

One of the technological highlights of the Frankfurt MusikMesse earlier this year was the upcoming version 2.0 of **Celemony's** acclaimed Melodyne software, which incorporates Direct Note Access technology, allowing users to edit individual notes within polyphonic audio material, change the pitch of those notes, change the key, and so on. Anyone buying the Melodyne plug-in after March 12 automatically qualifies for a free Version 2 upgrade when available.



www.celemony.com

Unity Audio and Blue Coconut's recently introduced **BlueCoconutUnity** brand's EchoVerb, a tape echo unit designed from the ground up by former Watkins/WEM freelance consultant Terry MacDonald. To that end, it aims to eliminate problems associated with early tape echo, improving performance, while retaining the distinctive analogue tape echo sound.

www.unityaudio.co.uk

Orpheus is **Prism Sound**'s latest multi-channel FireWire recording interface, a 192kHz-capable, 19-inch rack-mountable (1U) device, offering eight simultaneous balanced analogue inputs, four line-level jack inputs, four auto-sensing mic/line Neutrik combi jacks, switchable SPDIF/AES-EBU stereo digital input, eight-channel ADAT optical input, and built-in mixer, plus high-quality mic pre-amps – fully software-controllable via PC- and Mac-compatible control applications.

www.prismsound.com

Euphonix's new Artist Series line of Ethernet-based DAW controllers was certainly the talk of the hi-tech contingent at the NAMM Show – and rightly so. Available in two flavours, the MC Mix offers eight faders, channel control buttons, rotary encoders, and OLED displays; the MC Control offers four faders, but with the addition of a large colour screen with encoders and user-definable buttons, as well as transport control, and more.

www.euphonix.com

HHB's DualBurn CDR-882 Dual Drive CD Recorder's genuine REC-REC drive configuration supports seamless extended recording times across two or more discs, simultaneous recording of two discs, and high-speed duplication, making it suitable for a wide range of professional applications, including broadcast, music production, live sound recording, and duplication.

www.hhb.co.uk

The Matrix is the latest in the range of DAW controllers from **Solid State Logic**. Designed to integrate the analogue part of your studio with your DAW and – if you're using SSL's X-Rack processors – allow for instant recall of your hardware settings. The Matrix sports 16 touch-sensitive faders in a compact package that brings SSL's SuperAnalogue technology within the reach of many more facilities.

www.solidstatelogic.com

CEDAR Audio's DNS3000 Dialogue Noise Suppressor combines the tactile control surface of the original DNS1000 with the Pro Tools integration of the DNS2000. Additional features include onboard scenes with an intuitive recall system, automation to timecode, flying faders, and sample rates up to 96kHz.

www.cedaraudio.com

KRK Systems' ERGO is a digital room analysis and correction system (based on Lyngdorf Audio's patented Room Perfect 3D room analysis and correction algorithms), that purportedly improve any studio mixing space by correcting 'real world' acoustic problems. ERGO connects via FireWire when analysing, though all processing is internal, and even doubles up as a four-input/six-output audio interface.

www.krksys.com

DPA Microphones' recently launched 4017 is a short and exceptionally lightweight shotgun microphone offering a highly directional pickup pattern. The Danish company also worked hard on the practicalities of its design, weighing in at only 71g with a short body length of 210mm. Stated Sales and Marketing Director Paul Koza: "If you've ever tried holding a microphone boom for more than 10 minutes, your arms will appreciate the low weight of the 4017."

www.dpamicrophones.com

Olympus' new LS-10 Linear PCM Recorder is a pocket-sized unit with 2GB internal memory – plus an SDHC Card slot – that ships with Steinberg Cubase LE. Offering up to 24-bit/96kHz sampling rate and PCM recording (WAV/WMA, and MP3 formats in Normal, Wide, and Zoom modes), the LS-10 comes complete with a carrying case, USB cable, audio cable, and two mic windshields.

www.olympus.co.uk

Lexicon's slick-looking PCM96 represents its latest professional stereo reverb/effects processor. As such, following in the footsteps of the legendary PCM60 and PCM70, the PCM96 offers a comprehensive selection of classic Lexicon reverbs and effects, including the return of the Concert Hall reverb, together with more modern innovations like the Hardware Plug-In feature, DAW automation (through plug-in format), dual Ethernet and FireWire connections, and more.

www.lexiconpro.com

RME's MADIface purportedly represents the world's first portable MADI solution for laptops. Comprising the HDSPe ExpressCard MADI and a small breakout box, the MADIface offers 64-channel I/O with up 192kHz sample rate in MADI-embedded MIDI transmission, all of which can be freely routed and mixed. The MADIface uses SteadyClock to extract the reference clock at lowest jitter from the MADI signal, making long-distance connections even more convenient.

www.rme-audio.de

According to Product Manager Thomas Stubics, **AKG Acoustics**' C 214 "...was designed as a budget-friendly alternative to the leading-edge C 414 family; because the C 214 uses the same one-inch diaphragm as the C 414, the essence of that heralded C 414 has been captured in this newest model." The C 214's road-toughened construction is based around a dent-resistant metal grille that ensures high RF immunity without affecting its acoustical performance, plus a gold-plated XLR-type output.

www.akg.com

According to the Danish DSP specialist, the **TC Electronic** PowerCore X8 provides a massive amount of power, with eight fast DSPs, and oodles of RAM. Designed for serious studios and professional applications, the PowerCore X8 comes complete with 14 plug-ins, including Dynamic EQ and DeNoise (from the Restoration Suite package). Moreover, the limited PowerCore X8 Sonnox Edition also bundles the highly acclaimed Sonnox Oxford EQ and Sonnox Oxford Dynamics plug-ins.

www.tcelectronic.com

The **sE Electronics International Group** is all set to produce a brand new range of Rupert Neve signature series microphones under the sE brand later this year. The first of several mics being readied for production is a state-of-the-art active ribbon with revolutionary performance provided by discrete circuits and purpose-designed transformers by Neve himself. The capsule and manufacturing are being controlled by sE, while the electronics and transformer are being taken care of by Neve.

www.seelectronics.com

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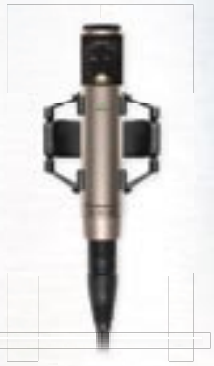
Oxford Plugins

www.sonnoxplugins.com



Sennheiser's MKH 800 TWIN is a 50kHz frequency response-capable dual-capsule microphone that provides two separate sound signals at the microphone output, allowing the pickup pattern to be remotely fine-tuned and corrected at the mixing console.

www.sennheiser.com

Zaxcom's Fusion is a high-res audio mixer and recorder, optimised for reality television, surround recording, and ENG applications. The lightweight unit boasts supreme power efficiency by recording to two CompactFlash cards for reliable, 100% solid-state efficiency, recording to one card in the mobile audio recording format, which allows audio to be recovered if power is lost during recording, while the other receives a redundant copy of the files.

www.zaxcom.com

The **Bricasti Design** M7 is a Stereo Reverb Processor that utilises the latest Analogue Devices dual core DSP processors to produce stunning algorithms. It features a fully differential analogue section and a transformer-based linear power supply housed in a non-corrosive stainless steel chassis. Produced by a team of former Lexicon employees, headed by Brian Zolner, the M7 features both analogue and digital inputs and outputs.

www.bricasti.com

The ZED-R16 represents **Allen & Heath**'s first dedicated recording mixer in over a decade, and effectively combines an analogue mixer with a FireWire audio interface and 'home studio' routing for building tracks. Features include 16 mono and two stereo inputs, dual mic pre-amp, four-band fully parametric EQ, four auxes, two stereo returns, plus 18+18 FireWire I/O and 8+8 ADAT I/O.

www.allen-heath.com

Audio test and measurement equipment specialist **Audio Precision** unveiled two-channel models of its award-winning APx500 Series audio analyser at the 124th AES Pro Audio Expo & Convention in Amsterdam: the APx525 has two balanced and unbalanced analogue inputs, plus 192kHz digital I/O, while the APx520 drops the digital I/O.

www.ap.com

Smart AV's Tango is a touch-screen DAW controller that features the company's ingenious ARC channel selection technology. Eight touch-sensitive faders, plus a plethora of encoders and buttons should minimise the need for a keyboard and mouse. Eminently flexible, the expandable Tango's new lower price point should enable many more users to experience the company's obsession with ergonomic design.

www.smartav.net

GRACE
design

M101

In 2000, the model 101 helped fuel a revolution. When people took professional recording into their own hands, it was there with all of the quality and performance of a high-end mic preamplifier, but with a price that made it available to the masses. 8 years later, and the cause moves forward with the newly redesigned m101.

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HHB FIRST WE LISTEN

EDIROL R-44

Portable Recorder

PAUL MAC finds a case in point where bigger might just be better, where four tracks might be better than two; and Edirol's R-44 seems to make perfect sense in this respect.

It might be a bit unfair to associate the Edirol R-44 with the surge of low-cost portable recorders that is currently pouring into the audio pool. For one thing, it's got four tracks, whereas most of the others have only two (or even one). I'm not sure if its significantly more expensive to produce a four-track recorder than a two-track one, but the sense behind it is undeniable. Given that we're talking about location recording, and that what many recordists want more than anything are options at the post stage, four tracks (or more) is most definitely the way to go. If your headphones deceive you into selecting that particular mic for the side channel, or the coincident pair as opposed to the spaced pair, or the bridge as opposed to the fretboard, a stereo recorder leaves you with no where to run. Four tracks let you hedge your bets slightly. This might be the over-riding pulling power of the Edirol R series (I include the R4 Pro in this) – low cost access to flexibility on location. Or there may be more to it...

Overview

The R-44 ticks all of the construction boxes – the case is solid and confidently weighty; if you drop it or knock it the casing will hit before the controls or sockets do (assuming there are no stones or pokey-out things), and nothing looks ready to snap or disintegrate. The controls essential to recording are all on the sloping front panel, along with the display. All the other stuff (menu, playback, power, effects, and so on) is on top. The only one that might have polished off the front panel nicely but instead is on top, is the Mark button, and this is only really relevant where the top is not easily accessible.

Also on top are small recessed switches for individual channel phantom power on/off, plus universal low-cut, and limiter switches. The analogue inputs are XLR/Jack combo types on the right side of the unit, and the digital I/O, SD card slot, USB connection, RCA analogue outputs, sync connector, and power connector on the left. The four analogue outputs can be set to either put out the four corresponding tracks, or a repeat of whatever the monitor output (headphones or internal speakers) is currently looking at. The Monitor output level control doubles as a push button to step through monitoring options, which are combinations of tracks and L/R routings.

The route to record is pretty direct with the R-44. As long as everything is set-up correctly, you just hit Record. Or, if you prefer, Record/Pause, and then Record. For level settings, four dual concentric knobs – one for each channel – each offer a stepped sensitivity control, plus a variable level control. I do like this approach to setting levels – the equivalent of a gain pot and a fader.

The only thing I found I had to keep on top of were the various record settings, effects settings, and so on. There's no way of storing set-ups as presets, so when you change your connections or when the requirements of the project change, you have to make sure you haven't left the input or sample rate selection unchecked, or a record effect in place, for example. To help matters, the Effects button light comes on when you go into record or play and you've got an effect in place (though when you go into record it might be too late) and sample rate/bit depth is displayed on the screen all the time.

Those record options include input select (combinations of analogue, internal mic, and digital inputs), sample rate (up to 192kHz), bit depth (up to 24-bit), record mode (recorded file types – a number of mono files, one or two stereo files, or a 4-channel file – all WAVs), Pre-Record (zero to 23.7 seconds, upper limit dependant on other settings), Project Name, and Limiter Link (combinations of channels to be limiter-linked). A project name can be either a date stamp or a user-definable project name, plus sequential numbers. If you've selected to record more than one file simultaneously, a folder is created and numbered tracks are written inside that folder.

There are several effects options inside the R-44, but you can only select one at a time, and again there are no user presets for storing commonly used settings. You ▸

THE REVIEWER

PAUL MAC is the Editor of Audio Media magazine.

Card Sharp

The biggest shift for the R-44 compared to its other Edirol brethren is the SD card storage, rather than hard disk. Many people prefer the idea of solid state storage for a portable recorder as there's nothing mechanical to go wrong. There are, though, a couple of general points to watch out for...

Firstly, SD cards are not infallible and get fragmented just like mechanical digital media. Fragmentation normally means slower access – and on an SD card this can be very noticeable. It's interesting how many people assume that their camera cards, audio SD cards, and even USB pen drives will simply take care of themselves. Regular back-up and formatting is the easiest way to prevent failure when it's least welcome.

Secondly, not all SD cards are created equal. The R-44 can use up to an 8GB SD HC (High Capacity) card, though Edirol still asks that you check its website for qualified cards. There is, you see, the matter of the speed class of SD cards. When you buy a card you'll notice a class number on it – this refers to the minimum access speed that card should provide (though many exceed this). SDHC cards, for example, are split into three classes (2, 4, and 6). Class six is the highest with a minimum speed of 6MB/s. You might also get a maximum speed rating such as you get with CD media (6x, 66x, 150x etc) that relates to multiples of 150kB/s – though the qualifying access operations are not standardised, so this rating is far less reliable.

The R-44 has a couple of tricks up its sleeve for dealing with SD media. First, there are all the standard file utilities (renaming, erasing, formatting, and so on), plus a file repair utility – just in case. The other more impressive facility is a bargraph meter on the main display that shows the SD card write buffer. When this fills up, it means the SD card can no longer keep up with the speed at which the R-44 wants to write data. An increasingly full buffer is a good indication of the deteriorating condition of the card (format required, normally).

Having said all this, at the time of writing I couldn't find the list of qualified cards on the Edirol website, so I scouted around for a reasonably priced, 8GB Class 6 SDHC card with a better-than-Class 6 spec from a well known make. Out of sheer paranoia I always re-format the card when I offload audio, and this card has given absolutely no problems since I bought it. Even the buffer refuses to budge much above 30 percent, however hard I stare at it.

simply choose from the list of effects (three-band EQ with parametric mid, six-band graphic EQ, noise gate, enhancer, compressor/de-esser, or MS-Mic) and decide how or if you want the four channels linked, plus whether the effect is for record and/or playback for each channel. The only small inconvenience is that you can't monitor an effect during record without actually recording it; that is, you can't apply the effect just to the monitor path. You can however monitor the effect in record-pause, then turn it off for the actual recording.

With an 8GB card you get up to 115 minutes of four tracks at 96/24 – at higher rates you're restricted to two tracks. Of course, you could always connect two R 44s together via the sync connection and effectively run an eight-track recorder.

In Use

Most of what the unit went through during the review was basic instrument miking, though I did try the internal mics. These put a fair amount of noise in the resulting file, so I would reserve them for note-taking or interviews and so on where transcription was its destination.

On the other hand, there was absolutely nothing wrong with the main analogue signal path – mic or line these pre-amps are very quiet. To be honest, I was expecting that. Most people now know that you can trust the R4 Pro pre-amps (a step up from the R4), and apparently it's those that are in the R-44. I pushed both sensitivity and gain up to their limits, but the big hiss didn't come.

One interesting point came up with a 414 plugged straight in and pointed at a wire-strung acoustic guitar. I got the sensitivity up to the last-but-one click – no pad on the 414 – which could either point to a well-judged or a slightly safe gain range, depending on how you look at it. And the converters are well up to the job – even when I pulled back the gain and plunged the incoming levels down to no-shows, listening back to the result had the program clear, clean, and unopposed by a noise floor. It definitely makes the most of the 24-bits.

> "All through this, I was actually surprised at how good the front panel metering is. It may be small, but it's distinct, and the peak lights are obvious."

All through this, I was actually surprised at how good the front panel metering is. It may be small, but it's distinct, and the peak lights are obvious. You can see all four tracks and the stereo output, and together with the stepped sensitivity, I was almost immediately confident about the levels and the headroom.

Even the limiter is trustworthy. I pushed it quite hard, and while you can hear the clamp when things get out of hand, I certainly wouldn't be adverse to putting it in where safety was paramount – it's one of those great pleasures, being able to trust your limiter.

Conclusion

This is a lovely little recorder. Yes, it has a couple of quirks, but what doesn't? What you really need from a four-track recorder is good pre-amps, reliable metering, and easy access to the result – and that's what you get. I can't think why almost the entire market for low-cost, portable multi-track has been left to Edirol, although I can't imagine the monopoly will last for long. Any wannabe competitors would have to be something very special to dent its position though. The R4 Pro keeps popping up everywhere I go – talking to games designers, classical recordists, outward-bound Foley Editors, and more, it seems four tracks are definitely better than two and the price is undeniably excellent. I'd guess that the R44 will have as much impact, if not more.

INFORMATION

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video guide

A Sound Pro's Guide To Video

HD Acquisition: Part 2

As the field of HD cameras widens, KEVIN HILTON takes a look at the contenders in the field: the HDW F900, CineAlta, FilmStream, and the Viper.

As with so much in modern life, the future for cameras is seen in the digital domain. The shift has already happened with still cameras, to the extent where some manufacturers have ceased making film models now that single lens reflex models based on digits are widely available, as well as reasonably priced, and the compact equivalents have just about seen off their celluloid rivals.

Lots Of Little Steps

While photography has made the single bound from film to digital media, cinema and television have had the viable interim option of videotape. Few filmmakers have taken the tape-based route, either analogue or digital, but TV since the late 1950s has been more and more built on the videocassette. Videotape was touted as the successor to film in both fields, and now digital means of capture are seen as replacements for both, although, realistically, the younger medium is more at risk than the venerable technology it was intended to replace.

Solid state and disk recording are already established for camcorders, but there is arguably an even more radical shift in the offing with digital cinema cameras making inroads into filmmaking. These look similar to film cameras, with the same options for lenses and filters to be attached. The difference is that they shoot not onto film or even videotape, but data media, most commonly computer-style hard drives.

The Hard Radical

Sony has promoted its high-end HDCAM camcorder, the HDW F900, as a viable alternative to film cameras. It is part of the manufacturer's CineAlta line of digital cinema products, the aim of which is to create a data chain from shooting, through post-production, to the delivery of finished features, to cinemas for display, using the latest digit-based projectors.

This concept was given validity by George Lucas who announced in 2000 that the second episode of the *Star Wars* prequel trilogy, which became *The Attack Of The Clones*, would be produced entirely in the digital domain, with the shoot using a 24p F900 jointly developed by Sony and Panavision. The third in the not-so-loved-as-the-original trio, *Revenge Of The Sith*, was shot on a Sony HDC-950, that boasts higher resolution and improved reproduction of colour.

Driving The Force

CineAlta cameras also give the option of recording on hard disk drives, as was done for the 2002 film Russkiy Kovcheg (Russian Ark). This Russian production was shot in uncompressed high definition using an F900 connected to a hard disk recorder with a capacity of 100 minutes. This made possible the film's 90-minute continuous moving Steadicam shot around the State Hermitage Museum in St Petersburg to be captured in a single take.

Among the objections to HDCAM and the other emerging HD camcorders in the early days of the technology was the use of compression technology to get the massive amounts of picture information onto tape. Thomson Grass Valley went its own way with a completely uncompressed signal path within its camera, effectively a 4:4:4 sub-sampling approach to give full RGB. Because of this higher resolution the Viper was marketed as a truer substitute for existing film cameras and endeared itself more to directors of photography from a cinema background.

Due to the technique used, a huge amount of data is produced from the back of the camera and has to be carried to the chosen recording medium over two BNC RF coaxial cables. Because of this output, Thomson branded the system, and the Viper, as FilmStream. By its nature no videotape would be able to accommodate FilmStream, so recording has to be onto either a server or a hard disk array recorder. When the Viper first appeared, not many such units were available, and those that were tended to be cumbersome and expensive.

A Light Issue

FilmStream is a dual HD-SDI (high definition serial digital interface) data stream in which RGB information is represented by a 10-bit logarithm working in real time. This logarithmic signal is produced from a binary digital feed produced by a conversion unit using the output of the CCD image section. This approach was chosen partly because both the human eye and film deal with light logarithmically, so the intention of the developers was for viewers of Viper pictures to respond to them as they ▸

SOUND PRO'S VIDEO GLOSSARY

Anamorphic Cinematography

The widescreen picture has been an integral part of cinema since the 1950s. Defined as any image shown in an aspect ratio that is broader than 4:3 (the almost square old-fashioned TV screen shape) or 1.33:1, widescreen gives films a greater scope and sweep. The technique is now well established in television, partly for that reason, but also because the wider image is closer to how the human eye sees the world. Some widescreen techniques involve shooting on one film stock and projecting from another, but others, including Cinemascope, use an anamorphic lens to compress the width of an image to half its size to fit the film frame. A corresponding lens is fitted to the projector to blow the picture up to its full size. The term comes from the Greek word anamorphosis for 'transformation', created from ana, meaning 'back' or 'again' and mophosis, for 'shaping'.

HD Acquisition: Part 2

news

Digital cinema camera manufacturer Dalsa has named Sohonet Solutions as a preferred partner to supervise the distribution of material produced by its Origin and Evolution cameras in a production chain.

Dalsa has already formed a working relationship with the service provider, which is the newly formed production services arm of media distribution specialist Sohonet. Under the arrangement, Sohonet Solutions will manage and deliver material from Dalsa cameras on set and location, ensuring it reaches the correct production department by the most efficient means.

Jon Ferguy, Senior Partner at Sohonet Solutions, said that the company is able to carry the 4k output for Dalsa cameras in a quicker and more efficient way than workflows involving HD camera footage converted to tape. "This will mean that Dalsa users will benefit not just from the higher quality of the Dalsa images but substantial savings in time and resources, both on set and into post," he said.

Rob Hummel, President of digital cinema at Dalsa, commented, "I have worked with the Sohonet team since I was with Warner Bros., and at Dalsa we recently used Sohonet Solutions for a major effects shoot for the new Bond production [Quantum of Solace], and could not have completed that project without them. Not surprisingly, Sohonet again exceeded my expectations. We're confident that any production using Sohonet Solutions will have a great experience."

would a film image. Another advantage is that a logarithmic picture has smaller changes in the density of the dark portions of images, compared to the lighter sections, which again is similar to how the brain processes this information.

Thomson chose to make FilmStream a non-proprietary system, regarding it as "a very convenient way to transport real-time RGB-log, full-resolution picture data". Other manufacturers and developers are able to use FilmStream, but as it is a registered trademark, Thomson's ownership of the interface technology, and the name and logo, has to be acknowledged on any third party product or system. A technical condition is that the FilmStream log curve can be used only with dual-link HD-SDI and full resolution RGB (an approximation of 4:2:2 in YUV is prohibited).

A Small Snake House

To provide a recording medium for the Viper, Arri Media, the first hire company in the UK to stock the camera, assembled eight hard disks in a relatively small but still unwieldy housing. This gave in the region of 40 minutes of storage in full FilmStream mode, and approximately an hour if a HD-SDI feed was used. As data cannot be passed direct from the camera to the recording medium, a processing and monitoring unit known as the Director's Friend was developed and became in 2000 the first portable hard disk HD-SDI recorder. This device also allows a degree of image manipulation to be performed, although this does not affect the raw material and is recorded as separate metadata.

Purpose-built hard disk video recorders are more common, compact, and affordable today, and include the Codex Digital unit, developed by Paul Bamborough, a founder of both SSL and Lightworks. Recording is on RAID arrays branded as the DiskPack; two of these provide approximately 54-minutes of 4k 24p material, while a single array gives 50 minutes in 1920x1080, 10-bit, RGB 4:4:4 form, also at 24p.

Thomson produces its own solid state recorder for the Viper, which can be either docked on to the camera or linked using Bluetooth. The Grass Valley Venom FlashPak also works with the LDK 6000 Mk II WorldCam multi-format HD camera, and offers ten minutes of recording time in FilmStream mode, and 18 minutes in 4:2:2 HD format.

> "This great capacity and ability to produce pure pictures that come close to 35mm film in the amount of data they contain was the big attraction of the Viper."

This great capacity and ability to produce pure pictures that come close to 35mm film in the amount of data they contain was the big attraction of the Viper. It was also a considerable mark against the camera, because to get longer recording times it cannot be operated as a camcorder and has to be connected to a storage medium. This is less of a problem now, and the Viper has featured on a number of commercials and some major feature films. Its credits include part of monster movie *Cloverfield*, most of *Collateral* and Michael Mann's return to *Miami Vice*.

But It Looks 'Normal'...

The Viper looks very much like modern 35mm film cameras, making it more acceptable to cinematographers. With its extension eyepiece the Viper has a familiar shape and appearance, so it does not appear too out of place on set. At the back of the camera body are three BNC plugs, one for sending HD-SDI to conventional monitors, and two that handle the FilmStream feed. There is an optional output unit that has a fourth BNC connector to carry down-converted PAL.

Three HD-DPM CCDs handle image processing and capture. These are designed to give the conventional HD image size of 1920 horizontal pixels by 1080 vertical pixels, creating a complete picture with 2073, 600 pixels, conforming to the world HD standard. But as the HD-DPM chip has four times the number of vertical sub-pixels, while maintaining 1920 in the horizontal, different groups can be assembled to produce a variety of visual effects, particularly in relation to aspect ratios.

Taking The Edge

By grouping together every four vertical sub-pixels the conventional 1080-line HD picture shape is produced. Arranging every three pixels in a group will result in 1080 resolution but as a cinemascope-style ratio of 2.37:1. Using every five pixels produces a 16:9 aspect (the widescreen familiar from digital television) with 720 lines. This gives the Viper the edge over cameras with a static 1080 vertical pixel arrangement, particularly when working in the anamorphic format (see glossary), that gives only around 800 vertical lines.

Although CCDs feature an 'electronic shutter' that can turn off the pixels by converting photons into electrons, or doing away with the electrons altogether, they are continually responsive to light. Leaving the Viper's chip array on at all times can produce blurring or streaking in the images. To avoid this, a mechanical shutter is fitted to the side of the camera and prevents light from hitting the CCDs for short passages in every frame sequence. During these periods, data is sent to a device that only plays out and is in constant darkness. This frees the image array for the next frame.

Socially Compatible

The Viper has been used with Zeiss and Panavision Prime (i.e., fixed) lenses, that most DoPs regard as the only opticals capable of getting the best into and out of HD/digital cameras. Arriflex accessories are compatible with the Viper, and the necessary support bars can be fitted to its body.

The number of digital cinema cameras available to cinematographers is not vast, but then the 35mm camera market has never been oversubscribed as both are specialist items with only a limited demand for them.

Next month's Video Guide will look at the other contenders, the Panavision Genesis, the Dalsa Origin and Evolution, the Red 1, and the high-speed Weisscam HS-1.

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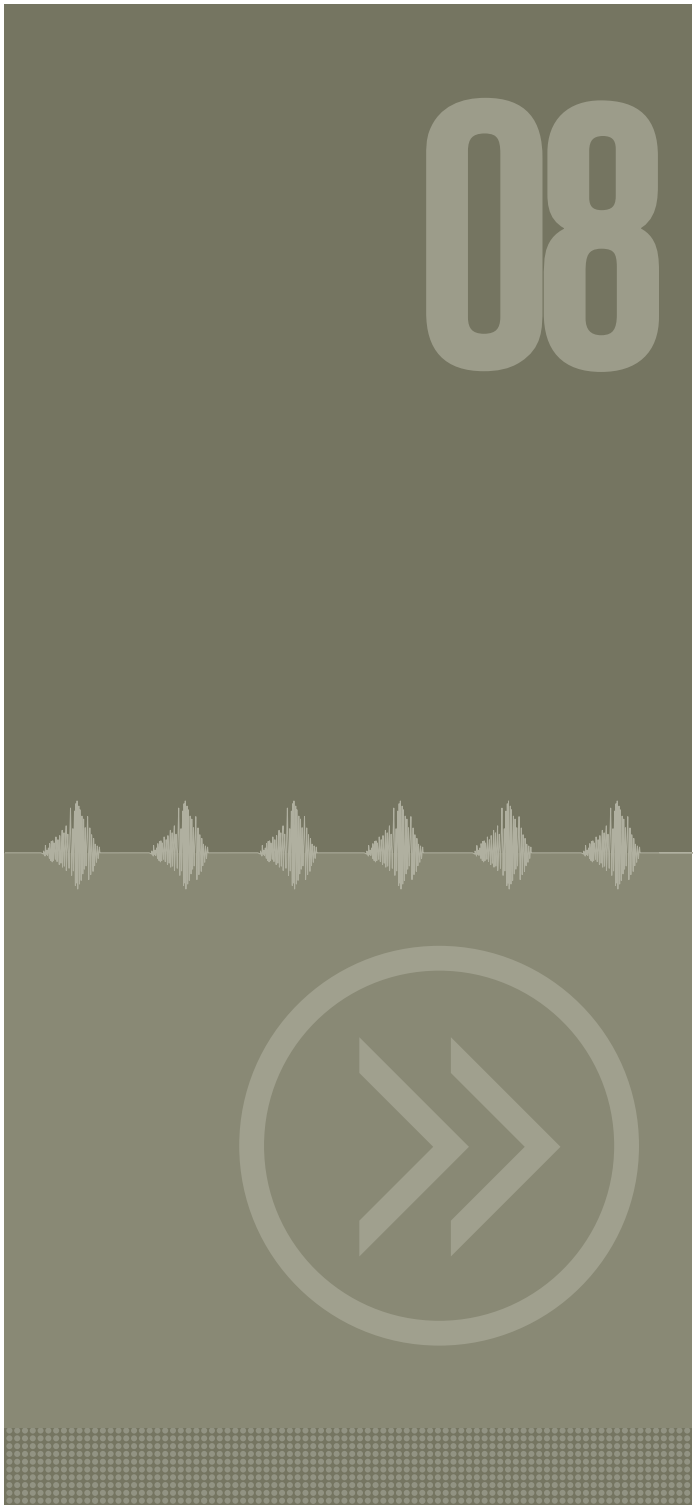

The nominations have been counted and it's now time to vote for your favourite project/person that you want to win a conch award this year. Your votes will then go forward to an independent judging panel, which will finalise the winners of The Conch Awards 2008. These will then be announced at a prestigious ceremony at The Mayfair Hotel on Thursday 25th September with the ever-popular after-party to follow.

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www.ukscreenassociation.co.uk/conch

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Sound Reinforcement

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AMSR is the regular AUDIO MEDIA Sound Reinforcement section, aimed squarely at SR professionals across Europe. Following the *Audio Media* ethos, the emphasis will be on the product reviews and technical features written by working industry professionals that anybody in SR will find relevant and useful.

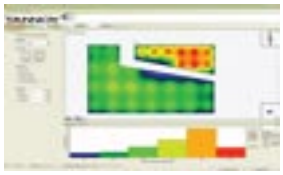
Weatherproof loudspeaker and audio system specialist Technomad Associates has introduced PowerChiton, a series of compact, durable, and weatherproof amplifier modules optimised for use with Technomad Vienna-16, Noho C, and Berlin weatherproof loudspeakers, and available in three sizes.

www.technomad.com

Crown Audio's new 135MA and 160MA mixer-amplifiers recently made their commercial market debut at InfoComm 2008 in Las Vegas. Both conveniently housed in compact half-rack space chasses, the 35W 135MA is equipped with three inputs while the 60W 160MA provides four outputs, easily configurable for a variety of uses.

www.soundtech.co.uk

www.crownaudio.com



Tannoy has become the world's first loudspeaker manufacturer to license EASE Address, the design verification software package – developed from EASE, electro and room simulation software developed by Berlin-based ADA (Acoustic Design Ahnert) – that enables system designers to, model, and confirm ceiling-distributed speaker systems.

www.tannoy.com

www.easeaddress.com

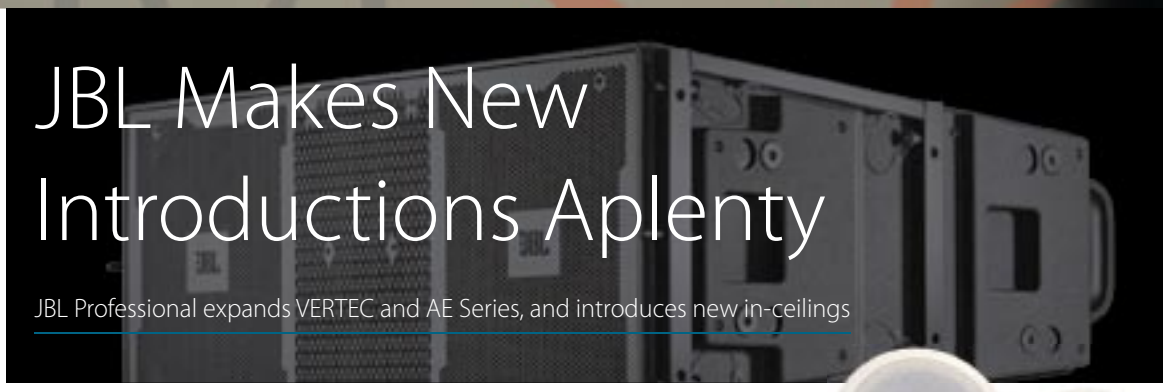
Riedel Communications has expanded its Performer digital partyline intercom series to include the C44 plus system interface (now incorporating a front panel-sited USB port for configuring its internal 24x24 matrix via the new Performer Audio Assignment software) and Performer 32 digital intercom matrix/stage management system.

www.tac4.com

www.riedel.net

JBL Makes New Introductions Aplenty

JBL Professional expands VERTEC and AE Series, and introduces new in-ceilings



JBL Professional has expanded its VERTEC Series line array systems family to include the VT4889ADP, a powered, three-way, full-size array element fitted with two 15-inch low-frequency transducers, four eight-inch midrange components, and three 1.5-inch neodymium compression drivers with beryllium diaphragms. Weighing in at 93.1kg, it is capable of delivering a maximum SPL output of 143dB. Meanwhile, the accompanying VT4880ADP Ultra Long Excursion powered full-size arrayable subwoofer, featuring two 18-inch Model 2269G ultra-long excursion low-frequency transducers, is capable of delivering 137dB SPL. Both units include a JBL DrivePack DP-3 module – featuring sister company Crown's proprietary BCA technology, and come preconfigured with JBL's new V4 DSP preset data, developed with LDM, to offer optimised acoustical performance.

Expanding on its Application Engineered (AE) Series loudspeakers, JBL has also introduced eight new compact loudspeakers, comprising the AC15 (two-way with one 5.25-inch LF transducer with a 150W continuous/600W peak power rating); AC25 (two-way, 5.25-inch LF transducer, 225W continuous/900W); AC16 (two-way, 6.5-inch LF transducer, 200W continous/800W peak); AC26 (two-way, two 6.5-inch LF transducers, 300W continuous/1,200W peak); AC18/95 (two-way, eight-inch LF transducer, 250W continuous/1,000W peak); AC18/26 (two-way, eight-inch LF transducer, 250W continuous/1,000W peak), AC28/95 (two-way, two eight-inch LF transducers, 375W continuous/1,500W peak); and AC28/26 (two-way, two eight-inch LF transducers, 375W continuous/1,500W peak).

Also new from JBL is the five-model-strong – Control 47C/T, Control 47LP, Control 47HC, Control 42C, and Control 40CS/T – Control Contractor 40 Series premium in-ceiling loudspeakers, plus the 8100 Series in-ceiling loudspeakers, comprising the 8124 and 8128 models.

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Yamaha Makes Moves To Acquire NEXO

Having already purchased a 10.22% interest in French large-scale, high-output loudspeaker equipment manufacturer NEXO back in June 2005, Japan's mighty Yamaha Corporation's Board of Directors recently announced their intention to make an offer to NEXO's founders to acquire all of their company shares such that Yamaha's shareholding would rise to 74.9% of NEXO's share capital (on a fully diluted basis) as part of a move towards making NEXO a wholly-owned subsidiary of the Yamaha Group. Thereafter it intends to acquire 100% of said shares by launching a tender offer process for the acquisition of the remaining shares in the marché libre/Euronext Paris financial market on which NEXO's shares are listed.

In a carefully worded statement, Yamaha anticipates completing this by October 2008 with a view to continuing and further developing the NEXO brand, creating systems solutions by advancing the position of NEXO and Yamaha in loudspeaker technology.

Yamaha Corporation
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www.global.yamaha.com

Community Introduces, Expands, And Updates

Community Professional's VLFs, iBOXs, and M12

Chester, Pennsylvania-based Community Professional has introduced its new VLF (Versatile Low Frequency) loudspeaker line, boasting a compact, low profile design that is ideal for theatres, restaurants, and other applications where larger subwoofers are impractical. Two models are initially available: the dual eight-inch VLF208's frequency response reaches down to 70Hz in passive mode or 60Hz using digital signal processing, while the dual 12-inch VLF212 features slot-loaded woofers for extended frequency response down to 50Hz (passive) or 43Hz (DSP).

Community Professional has also expanded its 20-model range of iBOX installation loudspeakers to include portable versions of all its full-range models, featuring handles, rubber feet, and stacking cups on four recessed corner mounting points. Three form factors are available: the two-way 1200-Series includes six full-range models, combining a high-power 12-inch mid/bass driver and a 2.87-inch edge-wound voice coil compression driver on a fully-rotatable, large-format horn; the 1500-Series utilises the same six rotatable HF horn options combined with a 15-inch mid/bass driver; and the 3500-Series is a large-format, three-way, full-range system utilising the same 15-inch LF driver and 2.87-inch compression driver, plus an eight-inch mid.

Finally, Community's M12 stage monitor has been redesigned, improving handling, access to inputs, and providing optional mounting for fixed installations. As such, the M12 is now available in 'low-lustre' black or white finishes with the HF horn moulded into the faceplate to the right or left of the LF driver to suit application preference, plus L/R pairs for stereo monitoring – with or without handles and mounting points.

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www.communitypro.com

Renkus Releases More Loudspeakers

Renkus-Heinz's 2005-introduced Iconyx Digitally Steerable Array System is being reintroduced as an 'R' version with purpose-designed coaxial transducers and RHAON (Renkuz-Heinz Audio Operations Network) technology all housed in a slimmer, lighter-weight enclosure. A multi-channel, DSP-driven digital amplifier controls each Iconyx R driver individually, interfacing with RHAON with audio signals being delivered via CobraNet, AES/EBU, or analogue formats. The RHAON DSP provides users with real-time control of over 12 bands of parametric EQ, 340ms of delay, dynamics processing, and other system tuning functionality, with onboard storage of up to seven configurations. Custom colours and weather-resistant versions are also available for outdoor applications.

Meanwhile, the Foothill Ranch, California-headquartered audio operations networks, digitally steerable arrays, powered and non-powered loudspeakers, system-specific electronics, and fully-integrated Reference Point Array systems designer/manufacturer has expanded its Sygma line to include the SG/SGX12S, a compact 12-inch subwoofer, available in various versions: the externally-powered SGX12S; the SG12S-2 with 200W digital amplifier; the SG12S-5 with 500W of integrated Class D amplification; plus the RHAON-Empowered SG12S-R and SG12S-5R. All versions are capable of at least 128dB SPL from 60 to 120Hz.

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Live audio specialist Britannia Row Productions recently deployed no fewer than 148 Outline Butterfly C. D. H. 483 Hi-Pack Butterfly line array elements backed by 72 Outline Subtech 218 high-efficiency, high-power subwoofers – all powered by Outline T Nine (2x 4800W) 1U amplifiers – for the Foo Fighters' sell-out performances at the new Wembley Stadium, purportedly the largest rock event yet held at the venue.

www.outline.it

FeONIC has agreed to a deal to install its Whispering Window sound system in the World Trade Centre Hull and Humber building where it will amplify sound by 'transforming' the conference room windows into effective loudspeakers.

www.feonic.com

Out Board previewed TiMax2 SoundHub (T2) – incorporating a scaleable multi-channel audio matrix and mixer to handle multiple sources and multiple zones (with optional CobraNet and EtherSound networking) – at this year's ABTT Theatre Show. Theatrical and event sound designers can load entire playlist and audio playback content onto the T2's internal hard drives and run them directly or remotely.

www.outboard.co.uk
www.1602group.com

Kansas City, Missouri-based professional audio products supplier Avlex Corporation has introduced the Superlux PRA52 hanging microphone as a professional sound reinforcement solution for theatrical stages, orchestra pits, audience response, and other applications. Featuring a back electret cardioid condenser element, the mic is available in low-gloss black or white finishes.

www.avlex.com

FAME Le Musical

JONATHAN MILLER jets into Gai Paris to catch the tail end of *Fame – Le Musical's* sell-out, three-month run at the Théâtre Comédia where, by 'bonne chance' or grand design, French digital console manufacturer Innovason played a leading role in the technical proceedings.

"Theatre is not about the scenery or the special effects. It's about lifting the spirit of man, and musical theatre should be about lifting it even higher." So stated David De Silva, Producer of Alan Parker's Oscar-winning 1980 movie musical *Fame*, following four New York High School for the Performing Arts students in their respective quests for fame from audition to graduation. Despite the success of *Fame* on both the big and small screens – with audiences around the world religiously tuning into its six-season namesake television series spin-off between 1982 and 1987 (that even sent the accompanying *Kids From Fame* album scurrying to the top of the UK Albums Chart in 1982) – De Silva's heart was evidently on the stage that *Fame* sought to so convincingly portray, for he subsequently spent eight years completing a completely new version of the project in collaboration with composer Steve Margoshes and lyricist Jacques Levy. "When I conceived and produced the motion picture *Fame*, I always imagined that it would be the ultimate reality-based musical," claimed De Silva. "There's a logical reason for the kids to be performing, because it's a part of their daily lives. They don't just burst into song out of the blue. My first goal was to create a show that would be relevant and timeless as a musical. *Fame – The Musical* is a blueprint for the ultimate ensemble production. It has a chorus of anywhere from eight to 80, and it allows for flexibility in staging, based on the talent available. It makes stars; it doesn't need stars to make it happen."

Yet the carefully created production's own rising road to fame would be a long and winding one; *Fame – The Musical* made its regional theatre debut at Miami's Coconut Grove in Florida in 1988, before breaking box office records at the Walnut Street Theatre in Philadelphia, Pennsylvania, one year later. Despite its pedigree, De Silva's beloved musical didn't receive a worldwide release until January 1993 when MTI (Music Theater International) in New York – publishers of plays like *Annie*, and *West Side Story* – gave it its European premiere in Stockholm, where it ran for four years. "I saw it four times and cried at every performance," De Silva gushed. "I didn't understand a word of it, because it's in Swedish, but I didn't have to; dance and music are a universal form of communication."

Vive La Fame!

Indeed they are; for similarly large-scale – if not necessarily quite so long running – productions of *Fame – The Musical* have now been produced in 26 countries, including Australia, Denmark, Japan, Korea, Norway, Switzerland, South Africa, Germany, Italy, Finland, Estonia, and the Czech Republic. The French-translated *Fame – Le Musical* represents its latest adaptation, opening on March 28, 2008, in Paris' historic 994-seat Théâtre Comédia on the right bank of the River Seine, to rave reviews from the likes of *Le Monde*: "If you're looking for a good dose of youth and happiness, the first French version of the American musical *Fame* is where you'll find it. Charming, and full of good vibrations, the show is filled with pure happiness – a feat in itself, and Ned Grudjic, the young Director, has made it 'Frenchy' – perfect at the Théâtre Comédia. Fame works because it is ageless. First love, first success, apprehension... we've all been through it in one way or another. Is it naïve? Outdated? Romantic? Probably, and so what? Gently moralising, *Fame* has the colour of true values; those we find in hard work, self-knowledge, and sincerity, putting the art of theatre back in the front stalls along with illustrious authors such as Shakespeare, Chekhov, and Tennessee Williams. A great show... a pleasure to watch and hear."

What was heard by that suitably impressed reviewer was largely – and fittingly – down to two consoles from ▸

French digital audio mixing console designer/manufacturer Innovason, supplied by SSE Audio Group partners Melpommen, one of France's leading live sound hire companies, who just so happen to be based in Nantes – around one hour's drive time from Innovason's base of operations in Plougoumelen (Brittany), while conveniently maintaining an office in Paris. According to 'acting translator' Xavier Pion, Innovason's Sales & Marketing Director, "Renaud [Millou] is the front of house guy, and he's a freelancer who works most of the time for Melpommen. They have three Sy48 and two Sy80 Innovason consoles, and here on *Fame – Le Musical* they have an Sy48 for FOH and an Sy80 on monitors."

Having just come off working on the world premiere of *Good Zachary*, directed by none other than John Malkovich as part of the Théâtre Comédia's 2007/2008 season, Millou was already familiar with the theatre itself and its recently installed d&b audiotechnik-reliant loudspeaker system – comprising Q1 and Q10 passive two-way loudspeakers, J-SUB actively driven two-way bass-reflex subwoofers, and E8 high-performance two-way multi-purpose loudspeakers (supplemented by a rented Nexo PS8 flying cradle-mounted GEO line array system for onstage monitoring); yet, amazingly, this latest three-month stint on *Fame – Le Musical* represents his first outing on any digital console, let alone an Innovason one! Translating, Pion was quick to put Millou's flying by the seat of his pants-style experience into its rightful perspective: "He says that – once it's configured – he likes using the console, because it is very practical. The small footprint of the console means you can actually manage a huge amount of inputs with only 48 faders. He's using the SmartFAD function for managing the maximum number of inputs with the minimum number of faders, so on the same 11 faders he's doing drums, bass, keyboards, a horn section, and percussion, by just selecting one button, and then you have all the different levels and equalisation on hand. When you only have 48 faders – which is a lot, but you have a big production like this one – you need to find space, so that's one good way of finding space, something he likes. He hasn't had time yet to attend a proper Inovason training seminar, to be familiar with all the configuration possibilities."

Flying Faders

As it was, the PA company physically configured the inter-connection between the two Innovason consoles off-site – including two networked Dio Core modular 64-channel EtherSound-enabled stage boxes – in readiness for dealing with the show's ten onstage musicians and 20 singers, such that Millou's FOH-positioned Sy48 and Monitor Engineer Jacques Maudre's Sy80 shared the same 61 inputs, though only the former can control the gain. "The engineers really do their stuff separately, although Renaud has the gain on the pre-amps of the Dio Cores downstairs," confirms Pion. "Actually, it is possible for the monitor guy to adjust quite a bit of the digital gain through the compressor trim, but they had to agree on the gain level for all the inputs. They don't touch the gains anyway, unless something really bad happens, but adjusting the gain of the compressor gives you the possibility to adjust from -11 to +20dB. This can be done independently, so when Renaud adjusts his compressors, it's not changing anything on monitors – and vice-versa. The owners of the PA company like that solution, because it's cost effective and practical."

Thereafter, two weeks was spent preparing and saving the show on the console in situ, keeping it safe on a USB key, separate hard disk, or both, specifically for running the show, "...because that's something you do when you can hear what's happening," Millou tells Pion, adding: "It could be done remotely, but it's more practical when you have the performers here, and you can hear what you're doing."

To that end, there are apparently 86 pre-programmed 'pages' or scenes in the show, as far as Millou's concerned. "He's not doing everything automatically," says Pion. "He does a lot of it

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manually. They could have done more pages, but he wanted to retain control, otherwise you spend your time changing pages all the time, because there's always something happening.

"He has one VCA called Choir; one VCA for the lead singers – the microphone that is used for the lead is not always the same, so he has to adapt to that, which is why he has so many pages, because one page might only last a few minutes; and one VCA for all the band's instruments. For example, when singer number one is singing into one microphone, and then it goes to singer number two, you change to another page where all the equalisation is done for the second singer. So when the show is running, Renaud's not actually doing the equalisation, because it's all prepared in advance, although he's adjusting when necessary."

In which case, channels can be 'relaxed' from being automated on Innovason consoles: "Basically, it isolates the function you want to tweak, and allows you to tweak it, choosing whether you affect just that one channel, one page, or whatever. When you hit 'Relax', you get a list of possibilities, so you can go, 'Right, I want to relax EQs,' choose whatever it is you want to apply your tweaks to, and it will isolate that function and take it out of the automation cycle, if you like, allowing you to work on it, and then just drop straight back in."

A very handy feature to have in the changeable world of long-running theatre, where stand-ins sometimes... well, stand in at short notice – as is Innovason's Off-Line mode: "Offline means that what you're doing is not affecting what is heard. You could, for example, go to page 10 and make a change, and go back to the mix at any time. Renaud says he once forgot to make some modifications, and when he remembered it was too late, so it was very practical – he went to the page where he needed to do something, and nobody heard anything!"

Hit, Miss, Or Maybe?

Sadly, *Fame – Le Musical*'s successful run at the Théâtre Comédia came to an early end on June 28, 2008, allegedly over a rights dispute between its producers. Assuming said dispute is resolved, however, plans are apparently afoot to extensively tour the show throughout France and possibly into Benelux territories, too, with more Innovason-driven mixing to boot, news of which will undoubtedly please Pion no end.

Singing the Théâtre Comédia's technical team's praises thus, the Innovason man concludes, "They're really using the features of the console; I've not seen that many times to that extent. What they've done is really clever; when they change scenes, for example, if there's one singer who's lead, but in the next scene she's still there, but now leading alongside four others who formed a choir in the scene before, just hitting 'Next' and seeing them grouped together is great! And in the next scene, the three teachers in the Fame story who were previously part of the choir are now lead, so the faders jump up for them. Two weeks of preparation for this was really short – no sleep... lots of coffee! It's a very nice configuration, actually." AM

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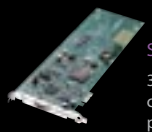

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Far from taking the 'life' out of 'live', SIMON ALLEN finds that the MaxxBCL offers the chance to get live sound as close to perfection as possible.

Mastering has always been a hot topic of conversation. Whether you're working on post production, broadcast, or live sound, engineers are always striving for the best possible sound; concentrating all the time to optimise the source. With its new BCL unit, Waves offers a complete optimisation solution to the world of live sound, as well as post production or broadcast.

Overview

The first and obvious comment to make is how well the unit has been manufactured. The whole unit is a lot heavier than you would expect, and the housing looks and feels like it could take a bullet. All the switches and dials are robust and of a very high quality. My only nag at the ergonomics would be the switches on the rear, that might be caught whilst out on the road or when plugging or un-plugging cables. It would have been better to have recessed switches here.

The front panel is very clearly laid out and uses good LED switches and bright displays, making working in the dark really easy, which is great considering how often I find myself doing FOH in the dark. On the bottom left of the front panel are four presets to allow you to save your settings. These are very easily operated, you simply hold down the desired preset for a couple of seconds.

The unit comes equipped with analogue in and out as well as digital, in the forms of SPDIF, AES, and Optical. There is also a word clock termination for syncing to other digital devices. This means the unit is very versatile in supporting up to 96kHz, 24bits, and also provides high-end AD/DA converters. The analogue I/Os can either be on balanced TRS jacks or XLR connectors both with individual ground lift switches. Each output offers calibration rotary screws to choose between six different dB settings.

First in the chain of three processors that can individually be bypassed, is the Renaissance compressor. You can select the compressor to be pre or post the bass enhancer. It has been designed from the Waves Renaissance Compressor and L2 Ultramaximizer software processors, both of which are highly acclaimed. You can select the attack time, the threshold, and the ratio and switch between 'Opto' or 'Electro' compressors. The 'Electro' compressor achieves a faster release time as the signal gain increases, and the 'Opto' has a longer release time as the signal gain increases.

The next processor along is the MaxxBass enhancer. There are three simple controls for this processor; one to select the intensity, one to select the frequency cut-off for the enhancer, and one to turn the High Pass Filter on and off. The HPF lets you remove or retain the original low frequencies. The MaxxBass bass enhancer simply adds degrees of harmonics to the signal that the ear perceives as low bass frequencies. This allows you to get a rich warm sound without over-straining the PA system, or any system where it might not quite deliver the lower frequencies.

Last on the front panel is the limiter. The limiter is modelled on Waves' famous L2 Ultramaximizer. The limiter combines a peak limiter, level maximiser, and dithering system that increases the digital resolution. The limiter is capable of a very fast overshoot-free response, giving you complete brick-wall limiting. There are three controls; threshold, output ceiling level, and a link button to link the threshold and output ceiling controls. This keeps the ratio between them the same, allowing easy adjustments during a performance.

Maxing The Sound

The degrees at which you can operate the unit are vast. Using it to the max you get a massive sound on any system, and in the studio you can use its features to get some great effects. While using the unit across FOH in the venue, just having the unit working subtly really enhanced the whole room. You don't need to 'take the life out of live', in fact it enhances all the little details which can be lost particularly in a live environment. This makes it a versatile unit for all types of music on any system.

In the studio the MaxxBCL sounded very musical to my ears. The Increased Digital Resolution (IDR) and the Auto Release Control (ARC) algorithms along with the MaxxBass processor are very intuitive and seem to have a level of understanding of sound. Even with the unit working gently on a mix it starts to give you a stereo file that you can work with and you can expect it to sound great on any system. I also used the unit on a bass track in a mix and it was amazing to hear how much it had helped, not just for the studio speakers but out of the studio as well.

The bass enhancer is brilliant. It is very easy to apply and means you can confidently work on most PA systems. While it enhances the bass, you may also be pleased to hear that it doesn't generate feedback, or even low end rumble. The compressors and the limiter allow you to get as much from your system as you need without damaging your speakers, as well as giving your mix the characteristics of a record. I think there is also a point that might be easily missed, and that is how well all three processors work together. The limiter seems to behave much better with the compressor slightly ticking over.

Conclusion

This unit gives live engineers that last little bit of control to achieve near perfection. Without the unit it would be like a studio mixer taking a mix out of the studio without it going through the mastering process. You can mix as hard as you like on a live rig, but until you add that final stage you won't get your sound to the next level. The MaxxBCL offers a standard that touring engineers can take with them to get great results anywhere, which is often missing from live sound. With all that protection for your system and so much processing power in one very well constructed box, the Waves MaxxBCL is worth every penny.

INFORMATION

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THE REVIEWER

SIMON ALLEN is Stage and Studio Manager of High Barn.

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TERRY NELSON spent a long time looking for the perfect pre; has he found what he's been looking for in the AD8HR?

It was during one of the Yamaha YCATS (Yamaha Commercial Audio Training Seminars) events earlier this year that I came across the AD8HR microphone preamplifier/AD convertor.

I had been looking for some time for an 8-channel pre with AES/EBU out to interface with the AES inputs in my Pyramix system, but this was not as easy as it seems: lots of Firewire, ADAT, and USB interfaces, but no AES – unless you have more budget. The AD8HR was timely, even though it has been out for over a year but kept well-hidden, and looked a likely candidate for review.

The Yamaha AD8HR is an 8-channel microphone preamplifier in a 1U package featuring 8x AES/EBU outputs, 96kHz/24-bit linear AD conversion, 128-times oversampling, and a dynamic range of 110dB. The unit can be remote controlled from Yamaha consoles such as the PM5D or DM2000, and multiple preamps can be connected together.

YAMAHA AD8HR

Microphone Preamplifier

A look at the front panel photo shows the layout with word clock selection; eight microphone channels, master control section with pushbuttons for +48V and HPF, a large 3-digit, 7-segment display, followed by an equally large gain knob, a small Off/On slide switch for +48V master, and large power On/Off push switch.

The rear panel is devoted to the I/O connectors and includes two Dsub-9 connectors for remote control and stacking, two Dsub-25 connectors for the digital outputs A and B, two BNC connectors for word clock in and out, and eight XLR-3M connectors for the microphone channels.

The digital A and B outputs can be used in two modes for the AES/EBU format, these being double speed (AE1), and double channel (AE2). The first provides 2 x 8-channel distribution, and the second transmits data as mono signals with channels 1-4 on digital out A, and 5-8 on digital out B. This is handy when the destination equipment can only run at 44.1/48kHz.

However, I can mention that I selected double speed and clock source of 48kHz from the Pyramix, and Digital Out A quite happily output 8-channels.

Operation of the unit proved to be very straightforward. The first thing to do was to set the word clock, and this was achieved by pressing the word clock pushbutton to cycle round to select the desired source, the unit being locked when the associated LED was illuminated. The AD8HR uses the microphone preamplifier from the top-of-the-line PM-5000 analogue console and an impressive user-list of classical music recording organisations was another spur to test the AD8HR.

Pressing the desired Channel Select button accesses the gain, +48V and HPF functions. Gain is adjustable in 1dB steps from –62dB to +10dB (the output is temporarily muted during adjustment) and the display shows the gain setting. The individual channel outputs are factory-calibrated but a gain-trim function allows fine-tuning in 0.1dB steps from -1.5dB to +1.5dB.

The +48V and HPF functions are enabled by the buttons in the master section and the corresponding LED in the selected channel will light up (or extinguish). The high pass filter is 12dB/octave and adjustable between 20-600Hz. As with most functions, setting the cut-off frequency is via the Select button

All channel settings (apart from gain trim) can be copied by holding down the Select button of the source channel and then pressing the Select button of the destination channel(s). Though this feature is very useful, it would be nice to have a 'link' function for use with stereo sources. A software update, perhaps?

Remaining functions include adjusting the LED brightness and panel operation lockout.

All settings are retained in memory. However, the AD8HR can easily be re-initialised to the default values.

So, most importantly, how does the preamp perform?

The unit was tested in a studio with voices, and in a rehearsal room with a group using close and ambience microphones. The immediate impression was that the sounds were very natural and uncoloured, also, that the ambience microphones had a lot of 'reach' (or depth, if you prefer). The HPF function performed very smoothly and was particularly effective on the vocal mics.

A small niggle concerns the slide switch for master On/Off phantom power. The fact that it is very discreet and easily moved, means that phantom could be off when you think it is on, as indicated by the +48V LED! Here I would strongly suggest the LED in the +48V button flash to indicate an off status and attract attention.

The top Dsub-9 connector has an associated slide switch marked 'PC-RS422'. RS422 is for Yamaha control, and PC for computer control. Though the latter is mentioned in the user manual, there is, in fact, no control program available from Yamaha. I am led to believe, though, that some studios are using control software produced by Audio Service GmbH of Hamburg, Germany.

In conclusion, the AD8HR does a simple job requirement very well at an economic price and can be integrated into larger systems. The multiple sampling frequency output options also add to the versatility. This said, the points raised should be fairly easy to implement and a possible added extra could be an ADAT output. This is still standard on a lot of equipment.

As a final suggestion to Yamaha, please supply an AES/EBU breakout cable with the unit – people do not always have one to hand! Thank you. AM

INFORMATION

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THE REVIEWER

TERRY NELSON has been involved in pro audio and music for more years than he cares to remember with specialist subjects including live recordings, sound reinforcement, plus acoustic and systems design. He is currently Vice President of the Swiss Section of AES, and heads up Swiss-based Studio Equipment.

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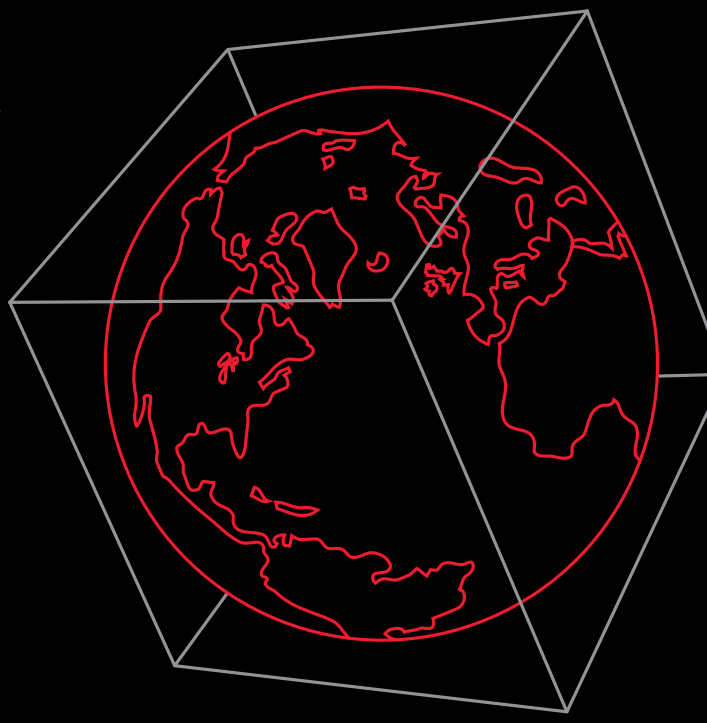

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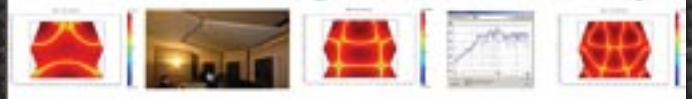

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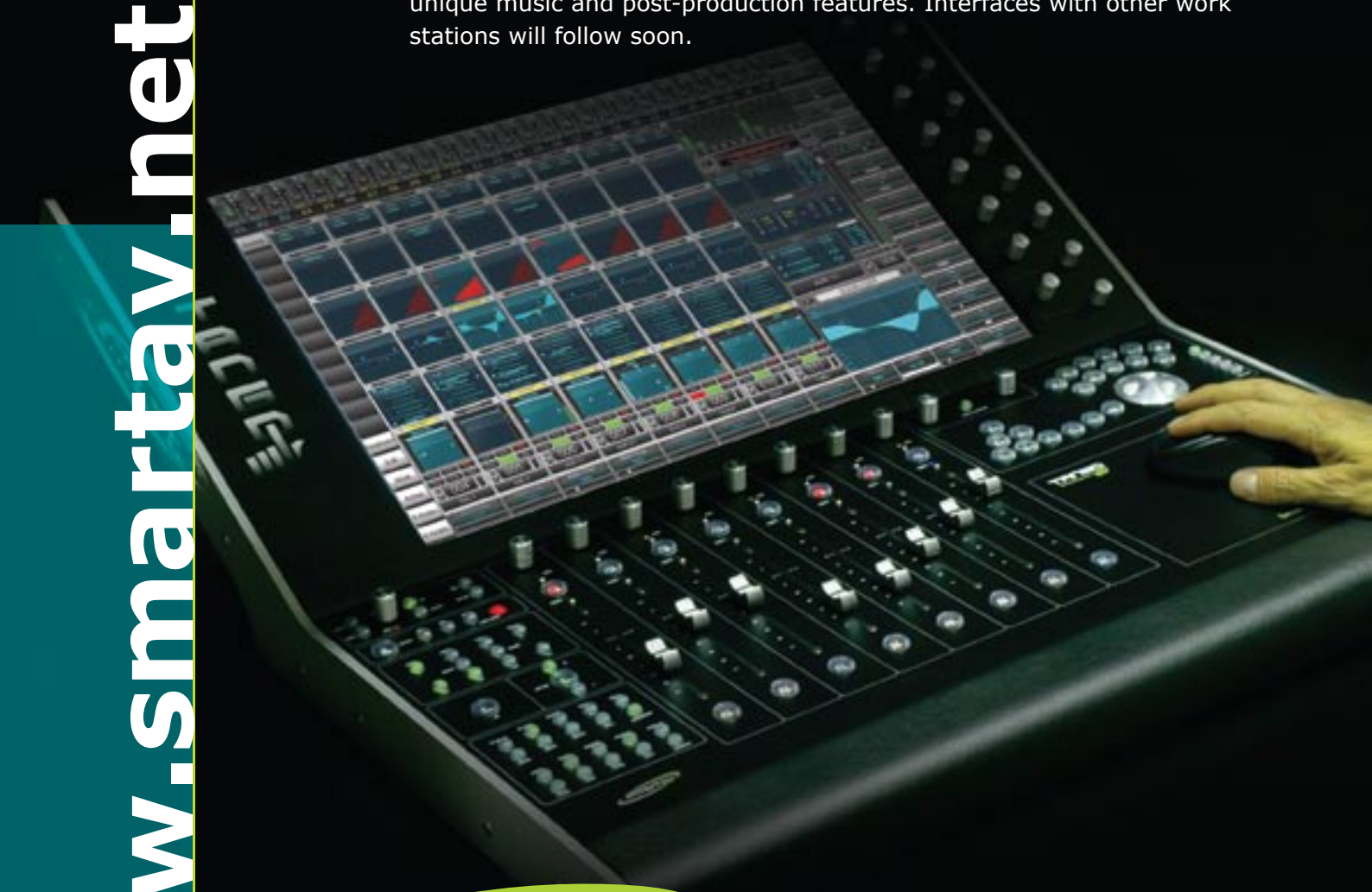

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Welcome to the updated *Audio Consoles Buyer's Guide 2008,* an exposé of the finest the audio console market has to offer. Whether you're in recording, post production, broadcast, or sound reinforcement, we're sure there's a selection of products here for you.

This magazine is a collection of promotional articles looking at 14 of the world's leading console manufacturers and their product ranges. Inside you'll find the stories behind the gear – the ethos' and design ethics that go into producing one of the core components in audio production – and details of the products themselves.

The hands-on approach to audio mixing has not yet been beaten. It's an art form in itself and a skill that sonic operatives treasure. Every console on the market offers something different to complement both the work at hand and the preferences of the operator, so sometimes it's difficult to narrow down the wide choice on offer to those products that are best suited to your needs. There's also new technology to consider – are you surround-sound ready? Has your current console got the extra horsepower or capacity needed to cope with modern production demands? Do you need a step up in signal intergrity and product pedigree? Could a more versatile board work harder for you or do you need a more specialist tool for a specialist job? Everybody needs to address at least a few of these issues, and probably more besides.

That's where this guide comes in. It's a collaboration between several NewBay Media titles – Audio Media Worldwide **www.audiomedia.com**, Pro Audio Review **www.proaudioreview.com**, Radio World International **www.rwonline.com**, TV Technology (**www.tvtechnology.com**), and Broadcast & Production **www.broadcast.it** All of these publications concern themselves with the business of production, and production technology for professional creatives, operators, technicians, and engineers everywhere. Visit their respective websites to find out more.

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You think *we* have a lot to say? You should hear our clients.

When we asked our clients which Element features they liked best — well, you see the results. And this is the *edited* version. (Good thing we bought two pages.)

Go (con)figure • The folks at MPR say they really love being able to configure their Elements and keep tabs on their entire Axia network using standard Web browsers. You can set up and administer an entire building full of consoles from the comfort of your own office (where there's plenty of Cheetos and Pepsi). Put an Internet gateway in your Axia network and you can even log into Element remotely, from home or anywhere else there's a Net connection. Great for handling those 6 P.M. Sunday "help me!" phone calls from the new weekend jock.

Who are these guys? • Why buy a console from Axia? Element was designed by Mike Dosch and his team of ex-PR&E renegades (who know a bit about consoles). And Axia is a division of Telos, the DSP experts.

Screen play • Element lets you use any display screen you choose, to suit your space and décor. Get a space-saving 12" LCD, or go for a big 21" monster. (This is Dave Ramsey's favorite Element feature, by the way. Anyone wanna bet he bought his monitors on sale?) Hook up a VGA projector and make a Meter Wall!

Perfect timing • You can't have too much time. That's why Element's control display contains **four different chronometers** to help keep talent in sync: a digital time-of-day readout that you can slave to an NTP (Network Time Protocol) server, an elapsed-time event timer, a countdown timer talent can set for any interval they choose... and there's also that big, honkin' analog clock right in the center of the screen (Big Ben chimes not included). We wanted to make it even bigger, but our screen designers charge us by the pixel.

Where's Waldo? • Hide-and-seek is a pretty fun game. But not when when you're in a hurry, and definitely not when you're on the air. So every Element fader comes with a big, **bold** 10-character LED display right above it to show talent, at a glance, exactly what source is assigned to that fader. If it's music from a digital playout system provided by one of our partners, the display can even show the title or artist of the song that's active. Talent tells us that these displays are at the perfect angle for either sit-down or stand-up studios.

Options • Clients say they love Element's uncluttered worksurface. We kept it clean by placing an "Options" key over each fader to give instant access to all the advanced goodies. It makes customizing settings easier than selling fudge cake to Dom DeLuise.

Black velvet • What's 100 mm. long, silky smooth, goes up and down all day and **lasts forever**? Our super-quality conductive-plastic faders, of course. (You have a filthy mind, mister. Shame on you.) We sourced the most durable, reliable, premium faders and switches for Element. And we added extra touches, like the custom-molded plastic bezels that protect on/off switches from accidental activation and impact. Because we know how rough jocks can be on equipment — some of us were (jocks, not rough). And because we also know there's nothing more embarrassing than a sudden case of *broadcastus interruptus*.

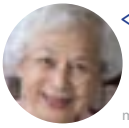
Audio cards • Well, *um*, there actually aren't any. Not in Element, or anywhere else in an Axia network. Why not? Think about this: your production guy spends hours crafting exciting, finely-tuned bits of broadcast magic, only to filter them through a card sitting in a noisy, RF-filled PC. It's like washing a wedding dress in the Hudson River. Not only that, broadcast audio cards are *expensive*. And they only work in *PCI slots*... how many of those are you seeing on new PCs? The **Axia IP-Audio Driver** installs on any Windows ® PC to send and receive pure digital audio right through the PC's Ethernet port — no sound card required. You get better, cleaner PC audio that's sharable right to the network. And you save tons of cash on sound cards, and on the audio inputs you would have needed for that PC card audio — more than enough to buy that cool new network tester you've been lusting after.

Great Phones • We wanted the phones on Element to work like an extension of the board-ops themselves. Unfortunately, talent objected to having Ethernet ports implanted in their skulls, so we came up with the next best thing. With Element, jocks never have to take their eyes or hands off the board to use the phones. Element works with any phone system, but it really clicks with the Telos Series 2101, TWOx12, or the new NX-12, which connects four hybrids plus control with a *single Ethernet cable*. Status Symbols™ (those cool little information icons) tell talent at a glance whether a line is in use, busy, pre-screened, locked on-air, etc. You can even dial the phone right from the board using the integrated keypad.

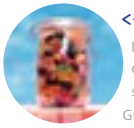
Fried Chicken • Conductive aluminum bullnose is connected to a 40-kilovolt storage capacitor* that can be activated with a GPIO closure. Set up a hotline remote trigger for the PD to give the jocks a little "positive feedback!"

Shown: 20-position Element, nicely equipped, $16,557.00 US MSRP. Not shown but available: 4-, 8-, 12-, 16-, 24- and 28-position Element. Dual exhaust and whitewalls optional at extra cost.

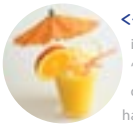
Element



<< "Neccessity is the mother of invention." So we invented IP-Audio for broadcasting: realtime, low-latency routing where logic & mix-minus follow audio. Thanks Mom!



<< Those other guys are really proud that they've built a couple dozen routers. We use Cisco switches to power our networks. Guess how many *they've* built?



<< At Axia, "remote" is our favorite word. As in "remote control," "remote maintenance," "remote diagnostics." So your life doesn't have to go on without you.

<< Soundcards? How quaint. Our IP-Audio driver for Windows sucks audio right out of computer NICs, like pimientos from martini olives. Mmmm... olives.

Meter reader • LED program meters? How very 1990's. Element's SVGA display has lots of room for timers, meters, annunciators (*there's* a five-dollar word) and more — enough to show meters for all four main buses at once. Reboot the console to 5.1 surround mode and the light show is even cooler. Any more bling and those fast 'n furious types'll want it for their dashboards.

Status Symbols • There are those icons again. (We're in love with icons. It's the Telos way.) These Status Symbols alert talent to phone lines ringing, mix-minuses minusing, talkback channels talking, etc. They can even display fader numbers, like you see here. Just one more way Element makes it easy for talent to do a fast, clean show.

How many? • How many engineers does it take to change these light bulbs? None... they're LEDs.

Swap meet • Element modules are easy to hot-swap. Remove two screws and a cable or two, and they're out. In fact, you can hot-swap the **entire console** — unplug it and the audio keeps going, because mixing is done in an external Studio Engine.

Can I play with your knobs? • Twist 'em, push 'em, make 'em click. Element comes standard with some pretty powerful production features, like per-fader EQ, voice processing and aux sends and returns. Context-sensitive SoftKnobs let production gurus easily tweak these settings, while simultaneously satisfying their tactile fixations. (Don't worry: for on-air use, you can turn off access to all that EQ stuff.)

Memory enhancer • We know how forgetful jocks can be, so Element remembers their favorite settings for them. Element's Show Profiles are like a "snapshot" that saves sources, voice processing settings, monitor assignments and more for instant recall. Have talent set up the board the way they like it, then capture their preferences with a single click for later use. (Hey, make *them* do some work for a change.)

Stage hook • This button activates the emergency ejector seat. OK, not really. It's the Record Mode key; when you press it, Element is instantly ready to record off-air phone bits, interviews with guest callers, or remote talent drop-ins. One button press starts your record device, configures an off-air mix-minus and sends a split feed (host on one side, guest on the other) to the record bus. Like nearly everything about Element, Record Mode is completely configurable — its behavior can even be customized for individual jocks. Sweeeet.

Coffee? • No console is spill-proof, but Element is easy to service and has no motherboard to damage in the event of stupidity.

Mixmaster • Does the thought of constructing a complicated mix-minus on-the-fly bring a big grin to your face? If so, you're excused (Masochism 101 is down the hall). But if you hate building mix-minuses manually as much as we do, you'll love the fact that Element does them for you. No more using all your buses for a four-person call-in; no more scrambling to set up clean feeds for last-minute interviews. When you put remote codecs or phone calls on-the-air, Element **automagically** figures out who should hear what and gives it to 'em — as many custom mix-minuses as you have faders.

It's already in there • Element comes standard with a lot of cool goodies you'd pay extra for with other consoles. Like custom voice processing by Omnia™ that lets you quickly build and capture compression, noise gating and de-essing combinations for **each and every jock** that load automatically when they recall their personal Show Profiles. (There's even a secret "Big Balls" setting that makes wimpy interns sound like John Leader. A fifth of Chivas to the first guy who finds it.)

Talk to me • Need some one-on-one time with your talent? Talk to studio guests, remote talent, phone callers — talk back to *anyone* just by pushing a button.

Push my buttons • You can program these custom button panels with any macro you want, from recorder start/stop to one-touch activation of complex routing switches and scene changes using PathfinderPC™ software. You can probably even program one to start the coffee machine (black, no sugar; thank you).

AXIA
A TELOS COMPANY

www.AxiaAudio.com

*© 2006 TLS Corp. Axia, Element, PathfinderPC, Status Symbols, Omnia TM TLS Corp., all other TM's property of their respective owners. *No, the console doesn't really have a high-voltage zapper in it. (But it sure would be cool!)*

Positive Reinforcement

Allen & Heath has always been a key player in professional live sound, and the brand is renowned internationally for its British designed, high quality products. In recent years, the company has expanded its product base to cover all elements of live sound, branching into the professional performance DJ and small PA markets, as well as digital installation systems.

Allen & Heath started out providing large mixing consoles for bands like The Who and Pink Floyd. A number of products are recognised as industry standards in their sector, and customers now span a large spectrum, including festivals, concerts, theatres, restaurants, bars and clubs, hotels, conference centres, stadiums, leisure centres, churches, schools and museums.

iLive Digital Mixing System

Developed for live sound applications, Allen & Heath's iLive digital mixing console system features an extremely flexible architecture with large-scale audio distribution and control. iLive is designed to bring an analogue feel to digital mixing and draws on the company's extensive experience in live sound and digital technology.

The heart of the system is the iDR-64 mix engine, providing 64 channels into 32 mixes, which can be assigned as any combination of auxes, groups, matrix, and main outputs, and includes eight assignable FX engines. The iDR-64 DSP module is part of a standalone mix rack – the iDR10 – with ten slots for eight-channel audio interface cards (analogue and digital variants).

There are four iLive control surfaces – the iLive-80, iLive-112, iLive-144, and the iLive-176 – which are designed to reflect the look and feel of an analogue console and which an experienced sound engineer would be able to walk up and use immediately. The faders are motorised and grouped in three sections, each with four banks, giving up to 176 control strips on the largest size surface. There is an LCD with multi-colour backlight above each fader for labelling and colour-coding channel information. The channel controls for preamp, filter, gate, EQ, compressor and limiter/de-esser are laid out across the top of the surface on rotary controls with LED indicators, while a colour LCD touch screen presents a graphical view of the processing and access to the automation and set up screens. Audio at the surface is available on four slots accommodating the eight-channel audio interface cards.

The iDR-10 mix rack.

Allen & Heath originally investigated the use of audio networks for fixed installation applications, providing flexible routing with efficient cabling for large channel counts. Research highlighted that audio networks have a great deal to offer live digital mixing too; the iLive mixing architecture is designed from the 'ground up' to exploit this technology. This gives the engineer freedom to route mic inputs from stage positions, share input splits from another mixer, utilise insert returns and input feeds at the control surface, or use broadcast feeds through matrix inputs, distribute output splits, mixes, and even talkback around the venue, all with CAT5 cable – replacing multiple snakes. However, audio networking technology for the live environment also involves greater complexity; low and predictable latency is a fundamental requirement, with a robust physical layer capable of long runs with common cabling and connectors.

The iDR-64 is controlled via an Ethernet network by a variety of controllers, including the new range of iLive control surfaces, Allen & Heath's PL range of remote units, third-party devices, or a laptop/PC.

Two EtherSound ports are provided for low latency remote audio distribution, FOH/monitor signal splitting, and the connection of multitracks and other EtherSound-equipped devices. All channels and mix

masters have EQ, dynamics and delay processing, with on-board FX. Also, each mix output has a third octave graphic EQ, and there is an option for a built-in 32-channel speaker processor.

iLive is the culmination of Allen & Heath's 35 years in analogue mixing, and almost a decade's experience of digital design for the installation market, resulting in an affordable digital console range that's expandable, flexible, and simple to navigate.

GL SERIES

Based on dual-function capability, which Allen & Heath pioneered in the early 1990s, the GL range – comprising the GL2400, GL2800, GL3800 and GL4800 – has been developed with a feature set dedicated to modern sound engineering, such as ambient matrix recording, fast IEM mixing, aux-fed sub, and engineer's wedge monitor.
To provide the best sound quality, the new GL models benefit from the latest audio circuit developments, a responsive 'musically-tailored' EQ, extended pre-amp gain range of 74dB with input on XLR or jack, and a new ultra-quiet mix head amp design for optimum dynamic range.

Frame sizes vary from 16 to 56 channels, in all-metal space saving frames that feature individual card and nutted pot construction; the GL3800 and GL4800 are also available in different combinations of mono and stereo channels. All models now include back-up power supply facility, multi-function mic/line stereo channels, and an option for the Sys-Link V2 expander system.

ML SERIES

The ML Series of VCA dual-function live sound consoles is Allen & Heath's flagship analogue range, comprising the 4 group, 8 aux, 8x4 matrix ML3000; 8 group, 12 aux, 12x4 matrix ML4000; and 8 group, 16 aux, 12x8 matrix ML5000.

Careful design of the audio circuitry has produced a no-compromise performance, whilst the plentiful I/O capability and feature set satisfies the latest trends in live sound engineering, in particular the growing number of inputs and outputs for multi-speaker house and monitor systems, demands of stereo in-ear monitoring, three speaker LCR imaging, advanced grouping and automation.

For nearly 40 years, Allen & Heath has designed and manufactured professional audio mixing consoles for an international clientele.
The company was recently acquired by D&M Holdings, a global operating company providing worldwide management and distribution platforms for premium consumer, automotive, commercial, and professional audio and video businesses including Denon®, Marantz®, McIntosh® Laboratory, Boston Acoustics®, Snell Acoustics, Escient, Denon DJ, Calrec Audio, D&M Professional, and D&M Premium Sound Solutions.

The ZED 4-Bus Range

Part of Allen & Heath's new range of ZED mixers for live performance, recording, and production, the ZED 4-bus series comprises the ZED-420 (16 mono + two dual stereo channels), ZED-428 (24 mono + two stereo) and ZED-436 (32 channel + two stereo).

The mixers have a USB send and return for PC or Mac recording, playback and effects, and Cakewalk's SONAR LE music production software is bundled with all ZED mixers. Features also include a high performance DuoPre TM two stage padless preamp, 4-band EQ with in/out switch, six aux sends, four sub groups, direct outputs on each mono channel, separate L, R, and M main buses, 100mm long throw faders, two matrix outputs, and a talkback facility to auxes or LRM.

The connectors are placed on the top surface for easy plug-in and patching, and the construction, with individual circuit boards nutted to the top panel, is identical to Allen & Heath's professional touring mixers.

ALLEN&HEATH

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Legendary Sound

Founded in 1961, AMS Neve is one of the most famous names in the international audio industry. The company's custom-crafted, British-designed, and hand-built mixing consoles, both analogue and digital, have been recognised for decades as the standard, and the Neve sound is sought-after in top recording studios, broadcast facilities, and sound stages in every corner of the globe.

AMS Neve continues to define the professional audio landscape with the introduction of the DMC and the award-winning Genesys consoles. These new products complement an already impressive product portfolio that contains the legendary 88RS, 88D,Libra live, and DFC Gemini, as well as the innovative digital dubber, CineFile, and AudioFile SC/X.

Genesys

A hand-built expandable analogue recording console with digital workstation control and a base configuration starting under GB£30,000, Genesys represents a new beginning for Neve – a console that builds upon Neve's 40 years of technical heritage, including legendary mic preamplifiers and highly revered analogue circuit design. But Genesys also accommodates the seismic changes in the methods of music recording, with extensive digital control and connectivity.

In its basic configuration, Genesys offers 16 channels of mic/line preamps, 16-channel DAW monitoring, hands-on DAW control for Pro Tools, Logic, Nuendo and more, eight auxiliary buses, eight group buses, two main outputs, four effects returns, comprehensive metering, 5.1 monitoring, two cue mixes, and talkback services.

Genesys can be expanded to 60 channels in a straight or articulated frame, with options including motorised fader automation, recall, mastering-grade 192kHz A/D and D/A converters, digitally controlled EQ and dynamics, remote mic amp control, and much more.

In any configuration, Genesys offers an excellent studio control surface with comprehensive monitoring and signal routing capabilities. This eliminates the typical mixture of awkwardly interfaced devices, and puts a proper console back in the heart of the studio.

As with all Neve products, Genesys offers sound and build quality beyond reproach.

GENESYS

- New ground-up Neve analogue design
- Up to 64-faders/128 inputs
- DAW control, 5.1 monitoring
- Eight auxes, groups, two main outputs
- Four effect returns, two cue mixes
- 16-ch, 8-track and 2-track metering
- Optional Neve EQ & Dynamics and transformer-coupled microphone pre-amp inputs
- Optional digital inputs & outputs, motorised faders (with Encore automation software) and Total Recall software
- Optional Total Recall software

88RS

With its unmistakeable Neve qualities of exquisite design, peerless craftsmanship, and legendary Neve sound, the 88RS continues the Neve bloodline of analogue consoles with a remarkable advance on anything heard before.

The Neve 88RS has set new standards as the ultimate analogue console and has become the signature of excellence for the world's premier engineers, producers, and studios including Abbey Road, The Village, Fox, Ocean Way, Skywalker, and Plus XXX.

Professionals throughout the world have chosen the full clean sound of the 88RS console. Its high bandwidth, pure audio path, superior dynamics, greater dynamic range, and greater control make the 88RS the first choice for recording and mixing the purest fidelity recordings.

88RS

- Designed for full surround from the ground-up
- Motorised large and small faders
- AFL surround solo monitor
- Overpress PFL on each channel fader
- Four main output faders, L/R, C, S, and LS/RS
- Acoustically optimised frame
- Supplied with or without patch
- Enhanced 'S' channel strip
- Enhanced spectral Neve format equalisation
- Legendary Neve soft knee compression
- Audio performance beyond 24/192 digital SP-2 option for enormous scoring power and flexibility

DMC

- Comprehensive High-Definition capabilities
- Six dual-layer banks allow the biggest of mixes in the most compact surface
- Automation and desk setups fully compatible with DFC, 88D, and MMC
- Stereo and full 7.1 multi-stem surround monitoring modes
- Featuring the same processing engine as the legendary DFC
- TFT meter bridge with ViewMixTM as standard – Level and dynamics metering, Graphical EQ and WavTrackTM display per path
- Expandable to 500 paths with sample rates up to 384kHz

DMC

Combining the power and sound associated with AMS Neve consoles with the monitoring and integration of workstation controllers, the DMC is an affordable world-class post production system. High PCM sampling rates, DXD mixing and 40 bit floating point processing provide the digital route to the ultimate in mix quality.

The DMC processing system provides power for all signal processing, mixing, and routing functions. The console can be tailored to suit the requirements of individual projects.

The input/output system provides analogue and digital audio connections to other equipment. The console processing system is connected to one or more modular I/O racks via MADI multi-channel connections. Interfaces are available in a wide range of formats, including 24-bit analogue conversion, and AES-EBU digital. Integral support for the MADI standard means that MADI-equipped routers and digital multi-tracks can be connected directly.

DFC Gemini

DFC Gemini is by far the most accomplished digital mixing console designed specifically for multi-format film dubbing and post production.

With an unrivalled installation base, DFC is the standard among the world's premier motion picture facilities.

From the outset, the DFC Gemini was designed for optimum mix performance. At the heart of the DFC Gemini is USP, the world's most powerful mix engine, capable of delivering the legendary Neve sound across 1,000 audio signal paths at 96kHz 24-bit in a single, high-resolution, DFC signal-processing tower.

AMS Neve's wealth of experience in ergonomic design has created the most flexible surface in the industry designed to maximise both controllability and feedback to the user.

The control surface provides rapid access to every aspect of routing and monitoring no matter how complex the mix. Channel strips provide total control with the patented touch sensitive LogicatorTM pots, giving instant visual reference to each knob setting. Enhanced visual feedback is provided by high resolution TFT monitors, powered by the AMS Neve proprietary ViewMixTM engine, allowing you, for the first time, to see as well as hear and feel your mix. Through ease of use the DFC Gemini has arisen as the market leader in predominantly freelance markets.

DFC Gemini

- High resolution TFT Channel display.
- Encore Plus automation system (compatible with 1800 AMS Neve consoles).
- Off-line edit options offering enormous cost savings
- Neve EQ, Dynamics and filters
- Expanded 12 Stem Mixing.
- Complete integrated machine control
- Optional Monitor Facilities Rack
- WavTrakTM display providing the user with level and dynamics metering, graphical EQ curve and audio waveform information on a path by path basis.

AMS NEVE

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A Digital Broadcasting Solution

Sound gives TV pictures the energy and excitement that movement alone cannot convey. As a broadcast specialist for more than 30 years, Calrec is exclusively dedicated to excellence in audio mixing for live production, consistently pushing forward technology barriers to provide comprehensive facilities that meet increasingly complex requirements

Calrec

Calrec provides a range of digital consoles in the Alpha, Sigma, Omega and Zeta, as well as Hydra Gigabit Ethernet audio networking. The company's consistent focus on this single sector of the marketplace has resulted in a natural understanding of the ergonomic and system specifications required by modern broadcast production.

Designed to meet the rapidly changing needs of broadcasters everywhere, these consoles are generously equipped with broadcast specific features. All elements of system design on Calrec consoles are focused on simplicity and reliability.

User's Gain

The assignable control surface minimises screen usage, enabling direct access to the majority of console functions. In addition all channels have facilities and bussing at all times; there is no sharing of resources. Operation independent of the PC together with hot pluggable cards and modules are standard. Calrec consoles also have rapid boot times – the console and racks boot from power on in less than 20 seconds, and a full control system reset is achieved in less than 15 seconds with no loss of audio.

With over 250 digital consoles live on air in studios and trucks every single day, Calrec consoles are in operation all over the world, and Calrec's reputation for innovation and build quality is second to none. According to independent research commissioned by the Sports Video Group in the US, Calrec are the main supplier of audio mixing boards to remote trucks across North America.

With a number of world first's Calrec are committed to innovation the broadcast market – and with the introduction of Bluefin technology, Calrec innovation has taken another quantum leap.

Breaking With Convention

We believe that over the next five years, as more surround production occurs

Calrec Through The Years

Calrec has been designing and manufacturing audio mixing console for broadcasters since 1971. The company has achieved some notable milestones along the way. These include:

- **1977**: Calrec supply the world's first true stereo broadcast console, BBC TV Studio 1.
- **1978**: The Calrec Soundfield microphone is launched – the world's first single-point source surround sound microphone.
- **1981**: Calrec supply the world's first digitally controlled assignable mixing console to BBC Radio OB's.
- **1999**: Calrec introduce the Alpha, followed by the Sigma and Zeta consoles in 2002 and 2003, with Hydra audio networking later that same year.
- **2006:** Bluefin High Density Signal Processing, launched on the Alpha at NAB 2006. Bluefin is capable of providing 480 channel processing paths, or 78 x full 5.1 surround channels, on just one DSP card. This revolutionary technology was unveiled for the Sigma later that year. Bluefin enables the Sigma to handle 320 fully equipped channel processing paths, packaged as 108 stereo and 104 mono channels that can be configured for up to 52 full 5.1 surround channels.
- **2007:** Omega with Bluefin is launched at NAB 2007. Bluefin enables the Sigma to handle 160 fully equipped channel processing paths.

Alpha with Bluefin
- Up to 96 faders
- 480 channel processing paths packaged as 162 stereo and 156 mono channels, allowing up to 78 x 5.1 surround channels
- 8 x mono, stereo or 5.1 surround groups
- 4 x main (programme) stereo or 5.1 surround outputs
- 20 mono aux busses configurable up to 10 stereo
- 48 multitrack outs for IFB or recording

Sigma with Bluefin
- Up to 64 faders
- 360 channel processing paths packaged as 108 stereo and 104 mono channels, allowing up to 52 x 5.1 surround channels
- 8 x mono, stereo or 5.1 surround groups
- 4 x main (programme) stereo or 5.1 surround outputs
- 20 mono aux busses configurable up to 10 stereo
- 48 multitrack outs for IFB or recording

Zeta
- Three frame sizes: 24, 32 and 48 faders
- Up to 108 channel processing paths
- Up to 8 stereo groups, or 8 mono groups, or 4 stereo and 4 mono groups
- 2 x main (programme) stereo or 5.1 surround outputs
- 8 mono aux busses configurable up to 4 stereo
- 16 multitrack outputs for IFB or recording

Omega with Bluefin
- Up to 56 faders
- 160 channel processing paths packaged as 48 stereo and 64 mono channels, allowing up to 24 x 5.1 surround channels
- 8 x mono, stereo, or 5.1 surround groups
- 4 x main (programme) stereo or 5.1 surround outputs
- 20 mono aux busses configurable up to 10 stereo
- 48 multi-track outs for IFB or recording

and even more surround sources are used, the size of mixing consoles used in production and live-to-air broadcast will need to significantly increase.

At some point, all that is now stereo may be surround. Today, an HD production may require 30 or 40 surround channels, plus a reasonable number of stereo and mono. With each surround channel needing six mono equivalent channels, conventional DSP systems soon struggle to cope.

The development of the Bluefin High Density Signal Processing system gives broadcasters the ability to meet needs. Bluefin is a revolutionary system that provides twice the signal capacity in a fraction of the space of conventional systems, at no extra cost, and with 100 percent redundancy. It is a proprietary architecture conceived and developed entirely by Calrec that provides up to 480 channel processing paths on just one DSP card.

Its award-winning design generates less heat and uses less power, while system resilience is improved by a second redundant card – it's like having another console as a hot spare.

Bluefin also provides full EQ, dynamics, and delay to all channels, and can provide up to 78 x full 5.1 surround channels, 8 x 5.1 groups with full EQ and dynamics, 4 x 5.1 main outputs, 48 multi-track outputs, and 20 auxes.

Additionally, the nature of Digital, HD, and 5.1 technology has resulted in a significant increase in the need for audio-video delay compensation. In HD production, it is sometimes necessary to use some SD equipment such as cameras. The up-conversion of these video signals introduces delays that must be compensated for in the audio system. This compensation must be introduced to match the video at the output, but not delay any audio being fed back to the presenters.

Bluefin incorporates over 22.5 minutes of audio delay, divided into 496 mono legs of up to 2.73 seconds each. It allows delay to be positioned in the audio path exactly where the operator needs it to achieve the desired compensation.

Broadcasters need to be asking questions about how their desk will cope with the transition to 5.1. Broadcasters should be realistic about the number of channels they are likely to need – if not right now, then in the next few years.

The reality of High Definition programming is that it will continue to create more demand for 5.1 content.

Our customers need more and more signal paths to create 5.1 channels, yet HD programming with 5.1 audio is only just taking off.

CALREC

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Ultimate Control

In 2002, DiGiCo launched the first truly user-friendly digital live mixing console into the audio market. The technology quickly became an established and accepted part of live sound production and, in the intervening six years, the DiGiCo team has strived to continually improve its product range.

DiGiCo's live digital mixing consoles have now been in existence for six years. However, the product line has been going for ten years, with the live range having been developed from Soundtracs digital studio desk.

The portfolio now includes the SD7, D5 Live, D1 Live, and D5T/12 for permanent installations such as theatre and worship facilities, as well as live events from corporate functions to rock 'n' roll concerts; the DS-00 and D4 digital mixing consoles, meanwhile, have dynamic automation for post-production facilities, live on-air broadcasts and full surround sound Dolby monitoring functions.

One of the big advantages of these consoles is that they all have a common design from the DSP engine to the surface interface. They all run MADI, OptoCore, or both, and file formats are the same, allowing sessions to be easily swapped or shared between consoles. This means that once an engineer knows how to work one D Series console in the range, any other will be instantly familiar.

The original surface concept of Soundtracs' consoles was deliberately designed to be simple and easy to use and, due to this good initial design, has changed little over the last ten years – although below the surface many changes and refinements have taken place, including the advent of Stealth Digital Processing™ in its most recent console, the SD7 – with the emphasis always being on allowing engineers to get their job done quickly and easily.

With the D-Series, efficient DSP engine design and coding means that DiGiCo products achieve more channels/busses per processor than any other manufacturer. Using floating-point processors gives vastly increased headroom and a system that is almost impossible to clip: up to 40 bits can be processed, meaning that even low-frequency signals maintain their integrity. As previously mentioned, all DiGiCo consoles use either MADI or OptoCore optical connections. The latter provides a stable means of transferring up to 512 channels in a redundant loop, over distances in excess of 1,000 metres.

DiGiCo is the only company that employs Gain Tracking™ to allow up to four consoles to share the inputs/

Selected DiGiCo/Soundtracs users

Live: Aerosmith, Andrea Bocelli, Bob Dylan, Brooks and Dunn, Depeche Mode, Earth Wind & Fire, Eric Clapton, Foo Fighters, George Michael, James Taylor, Kylie Minogue, Lenny Kravitz, Madonna, Oasis, Pavarotti, Robbie Williams, Rod Stewart, Stereophonics, Take That, The Who, U2.

Festivals: Glastonbury 2003, 2004, 2005; V2003, V2004, V2005, Live8, Live Earth, Big Chill 2006, 2007, 2008, Festival Internacional de Benicàssim, Download, Hyde Park Calling, O2 Wireless, Lowlands.

Theatre: Les Miserables, Mamma Mia, Mary Poppins, We Will Rock You, Spamalot, Chitty Chitty Bang Bang, Dirty Dancing, A Chorus Line.

Studio/Broadcast: Alchemy, BBC, Molina ire, Wave Recording Studios, Endemol, Sphere Studios, Yellow Cab, Shen Zhen TV Station, BSkyB TV, DR Radio Denmark.

Company History

In 2002, DiGiCo launched the first truly user-friendly digital live mixing console into the audio market. The technology quickly became an established and accepted part of live sound production and, in the four years since, the DiGiCo team has strived to continually improve its product range. Listening to the people who use the product range on a day-to-day basis and truly understanding what they want and need is the key component of this ethos. This means that DiGiCo produces products that the market wants and not just what it thinks the market needs.

The DiGiCo team is as important as its products. The R&D department probably has more digital experience than any other. Technical Director John Stadius has been with the company for 30 years, including his time at Soundtracs. Add to this the team of James Gordon as Managing Director, David Webster as Marketing Director, the considerable behind-the-scenes skills of Helen Culleton and Maria Fiorellino, and a skilled and knowledgeable sales force, and you have total assurance that the company is staffed by the very best in the business.

TD.+ + + + DIGICO LTD.+ + + + DIGICO LTD.+ + + + DIGICO LTD.

SD7

The SD7 is the first digital mixing console to use Stealth Digital Processing™, making it the most powerful live performance console to date with more than eight times the processing power of its nearest rival.

It has a totally flexible bussing structure with a possible 128 busses and 256 processing paths, plus a 32 x 32 Matrix, 32 x 32 band graphics EQ and a plethora of internal effects.

By packing all this power into just four chips, against the D Series' 39, the SD7's efficiency is dramatically increased, while space has been freed up to allow two complete redundant processing engines to be accommodated within the console.

D5 Live

Comprising the D5 Live console itself, a front-of-house DiGiRack containing A/D converters and I/Os, a matching stage DiGiRack

and 100m or fibre optic cable, it is a complete, self-contained system that does away with the need for a multicore, splitters, line drivers, dynamics processors and – optionally – an entire effects rack too. The D5 Live can even record to multitrack with a single, simple MADI cable and a hard-disk multitrack recorder to any DAW and even a laptop now with the new RME MADIface.

The D5 Live system includes the D5 56, 56EX, 112EX, and FMX.

D1 Live

The D1 Live system has all the extensive features of the D5 Live, and provides the high quality audio solutions synonymous with DiGiCo/Soundtracs brands, but in a smaller, lighter package and is the perfect addition to an installation or rental system.

The D1 system comprises the D1 Live 40, 48DP, 56EX, and Custom.

D5T

The D5T Digital Theatre Mixing system is a theatre-specific system based on the award-winning D5 Live platform. The D5T system comprises the D5T, D5Tc, and the D5T12, a hybrid of the D5T, giving 12 faders rather than the standard eight, to provide more VCF control within the standard console surface and footprint.

DS-00

Aimed at the broadcast post-production and music production marketplaces, the modular, expandable, digital DS-00 offers an exceptional package of features and flexibility for its price point. The optional EX-00 is an eight-fader expansion unit, allowing expansion of the work surface to accommodate more physical faders whilst the FP-00 adds specialist film mixing facilities to the DS-00's post-production features.

D4

The D4 provides the ideal combination of DiGiCo's unique touch-screen work surface topology, interfaced with an incredibly powerful digital engine. The result simultaneously provides for up to 20 full audio channels and 124 output busses, all controlled by one of the fastest and most intuitive automation systems currently available.

house racks without affecting each other's gain structure, having to have splitters, or change from digital to analogue. This is ideal for the live and broadcast environment where there may be a front-of-house, monitor, and mobile broadcast/record console. DiGiCo consoles also have a different approach for accessing channels: whilst many products provide controls for a single channel accessed by a channel select key, DiGiCo consoles provide a visual indication of what is happening on all the console's faders. For example EQ, Dynamics, gain, pan, etc, have dedicated controls for each block of eight channels (twelve channels on the SD7). With the exception of the I/O racks, DiGiCo consoles are a one-box solution, giving the minimum number of connections and allowing engineers to turn up, turn on, and mix.

The I/O is housed in one of two racks – either a standard size 9u DiGiRack, or a more compact 4u MiNiRack – and provides full redundancy both in terms of power supply and the racks themselves, minimizing the issue of signal degradation from sources such as microphones. The SD7 also provides, as standard, integrated I/O within the surface, thereby, for FOH applications, eliminating the need for an external local I/O rack. The use of the 150-metre fibre optic drum also eliminates the need for bulky multicore snakes. The common interface of the I/O – MADI or OptoCore – provides a seamless interface between boxes, and gives up to 224 inputs and 224 outputs with the D-Series consoles, and up to 696 inputs and 696 outputs with the SD7 for any format including ADAT, AES/EBU, Tdif, Aviom, Ether Sound and D-TuBe, and with the latest interface box, MADI to Pro Tools HD without the need for any external I/O. Offline software allows preparation to be done on an off-site computer, allowing huge savings on set up times.

DiGiCo has always made its consoles future-upgradeable, as with the V4 upgrade package for the live and recording, broadcast, and post production consoles.

DiGiCo

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Consoles For Studio & Live Sound

ICON D-Control ES worksurface.

Digidesign's ICON integrated console system and VENUE live sound environment provide the most creative, flexible and comprehensive set of tools for the Music, Post, Broadcast and Live Sound Industries.

ICON
INTEGRATED CONSOLE

The ICON Concept

The Digidesign® ICON integrated console system is a complete, scalable audio production solution that enables you to accomplish every aspect of a mixing project within a single environment. Found in Music, Post, and Broadcast facilities worldwide, with Pro Tools® as its software platform, ICON allows you to transfer audio projects to and from any Pro Tools-equipped studio around the world, seamlessly, while retaining all session and file information.

Consisting of a D-Control™ ES, D-Control or D-Command ™ worksurface, a Pro Tools|HD® Accel system as its DSP engine, and modular Pro Tools|HD I/O interfaces and peripherals, ICON is more than just the best digital console on the market. It's also the only truly integrated console and DAW system.

Console And DAW As One

Unlike other solutions, which attempt to piece together independently developed components, ICON was purpose-built by Digidesign to extend and deepen the powerful capabilities of its Pro Tools|HD workstations. With direct control of the mix engine from the worksurface, ICON adds new functionality beyond what is available in the Pro Tools application – allowing more visual feedback on what is happening in the mix, added automation functionality and more instant control over your track layouts with access to multiple plug-in parameters.

With full recall of every project parameter – including audio and MIDI editing, mixer configuration, processing, and automation, ICON systems enable you to switch out even the most complex sessions in just minutes.

The Most Versatile Console

With ICON, you're not locked into dedicated, built-in EQ and dynamics processors. You have access to the industry's largest collection of plug-in effects, giving you easy ways to instantly transform the sound of an ICON system. Emulations of vintage analogue hardware units and meticulous re-creations of familiar console EQs and dynamics processors, such as the Sonnox and Waves SSL 4000 plug-ins, let you work from a familiar sonic palette and combine effects to make ICON sound like a console no one's ever heard before.

ICON D-Control And D-Control ES

Expandable to 80 physical faders, the D-Control or D-Control ES worksurfaces offer a comprehensive array of touch-sensitive controls and visual mixing feedback. With a dedicated centre section, per-channel control over all processing functions and routing, global automation capabilities, and full studio and control room monitoring and communications facilities, D-Control delivers an unprecedented level of hands-on control over the most complex projects.

ICON D-Command worksurface.

ICON D-Command

Expandable to 24 physical faders, the D-Command worksurface packs amazing control and ICON-exclusive Pro Tools functionality into a medium-format console to accommodate your room size, typical project requirements, and budget; featuring dedicated, centre section panels for EQ and dynamics plug-in editing, as well as per-channel control over many processing functions, routing, and automation modes.

ICON Empowered Studios

Canal +	Record Plant
Envy	Sonoblok
Granada TV	Sony Picture
MosFilm	Studios
Novastar	Soundworks
Pinewood	SouthSide Studios
Shepperton	Technicolor
Studios	Widget

See more at www.digidesign.com/icon.

VENUE
live sound environment

Pyramid Stage running on D-Show and D-Show Profile, Glastonbury 2007.

The VENUE Concept

VENUE is a state-of-the-art live sound production environment that delivers studio-grade audio, unprecedented reliability, and maximum flexibility for today's most demanding mixers and engineers in touring sound, theatre, houses of worship, and fixed installations.

This highly expandable and customisable system comprises the D-Show® or D-Show Profile™ mixing console, I/O racks, artist-driven PQ monitoring, and Pro Tools recording interfaces. With numerous hardware options for every system component, VENUE offers the ultimate in flexibility for all types of live sound applications.

D-Show Console.

Live Sound Reinvented

The VENUE system architecture establishes a new paradigm in live audio. Remote-controlled, studio-grade preamps connect to the console via a redundant multi-channel digital cable system, eliminating the need for bulky, costly analogue snakes. Access to industry-standard TDM plug-in effects, developed by the best names in the audio industry, turns the concept of replacing all external processing racks into a reality. Remote control of the D-Show mixing surface via dedicated personal controllers allows artists and monitor mixers to truly work hand in hand.

Pro Tools Integration

VENUE offers the most streamlined, reliable, and economical integration of industry-standard Pro Tools recording and playback capabilities. Since VENUE can also serve as the audio interface for Pro Tools, you can make professional 128-track recordings without the need for additional I/O or preamps.

Using Pro Tools as a playback source, you can augment live performances with studio tracks or conduct 'virtual soundchecks' to refine console settings without the presence of performers.

VENUE Systems

VENUE is a modular system that can be custom-configured for a range of live sound applications. Its basic components include the D-Show or D-Show Profile mixing console, a multi-channel digital snake, and either a FOH (front-of-house) Rack and Stage Rack, or Mix Rack. Released in 2008, the Mix Rack combines the functionality of the FOH Rack and Stage Rack into one compact unit, offering an integrated and more affordable audio I/O and DSP processing solution for smaller tours or installations.

D-Show Console

The result of several years of design and ergonomic refinement, the console offers an intuitive and manageable interface to enable control of a large number of inputs from a smaller mixing surface while giving you the flexibility to expand the console surface with up to three Sidecars to reduce the need for layering or assignment by the user.

VENUE On The Road

Glastonbury Festival	Paul McCartney
Goo Goo Dolls	Placebo
Isle of Wight Festival	Radiohead
Justin Timberlake	Rent (West End Theatre)
Maroon 5	RTÉ (Outside Broadcast Truck)
Montreux Jazz Festival	Tom Petty
	U2

See more at www.digidesign.com/venue

D-Show Profile

This compact mixing console is a size-conscious alternative to its acclaimed big brother D-Show. It's also fully compatible with all existing VENUE hardware and software, meaning you can forget about ever having to learn new software or rebuild your console settings from scratch when moving between VENUE mixing consoles.

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Euphonix

Euphonix digital audio mixing systems and controllers fall into two main categories: systems for broadcast on-air and production applications, and systems for music and audio post-production applications.

Broadcast Products – System 5-B And Max Air

With new HD standards currently being adopted by stations throughout the world, the audience demands higher quality audio and surround sound. Audio operators also have to handle increasingly complex productions with ease. From news to sports to production, in the studio or on the road, Euphonix has a range of flexible and modular digital audio mixing solutions, from 32 to over 1,000 channels that can be tailored to exactly meet any facility's requirements.

System 5-BP in CLS Audiovisuals OB truck in Portugal

The Euphonix broadcast line now features some significant new product updates including new System 5 and Max Air control surfaces, a new DSP SuperCore, new fibre remote pre-amp solutions, and integration with video automation systems and facility routers.

System 5-B

The most advanced digital broadcast mixing system available. It is designed for audio professionals who demand the best. With eight knobs per channel and TFT displays for metering, routing and parameter display, System 5 is built for the ultimate in operational flexibility and visual feedback.

Max Air – a compact surface for broadcast.

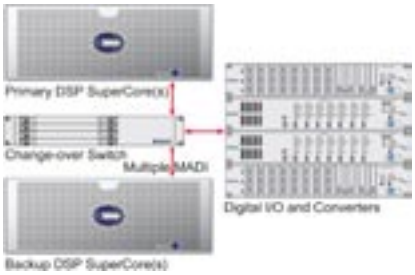
Max Air

A more compact control surface with four knobs per channel and a central touch screen interface making it very easy to learn and use. Max Air is ideal for one operator to handle everything from on-air news to production and outside broadcasts.

New DSP SuperCore

The new lightweight and compact DF66 DSP SuperCore is the primary signal-processing engine and router for System 5 and Max Air digital mixing consoles. It includes DSP for up to 300 channels per DSP SuperCore, up to 24x24 MADI I/O (1,536 x 1,536 paths), and a broadcast quality router.

Two DSP SuperCores can be fitted with a changeover to allow for 100 percent Redundancy Option for transparent changeover of DSP, MADI I/O, and Router in the event of failure – the only true redundant system available on the market.



One of seven System 5 TV/Film post consoles at Todd-AO in Los Angeles

Converters and I/O

Euphonix has a wide range of converters products to cover every installation – from highly modular racks that can be customised with individual cards, to larger 24-channel converter modules and 56-channel digital format converters. Converters and mic pre-amps may be shared between multiple consoles.

Modular I/O System And Fibre Remote Mic Pre-amps

The modular converter range is based around a 3RU 19-inch chassis conforming to the DIN 41494 specification with dual power supplies. Cards may be fitted in slots at the front and the rear for high-density configurations. Ten different input/output cards are available offering many different combinations including AES/EBU, SDI Embed and De-Embed.

New Fibre Remote Mic Pre-amp Solutions

Featured is a 3RU stagebox capable of housing 48 remote pre-amps and 16 analogue outputs. Connection is made via redundant MADI-over-Fibre and LAN-over-Fibre (redundant or non-redundant). The system allows multiple stageboxes to be connected and includes a number of end-to-end fibre solutions.

Audio Post-Production And Music Products – System 5, S5 Fusion, System 5-MC, And MC Pro

All Euphonix products now connect to external DAW and video applications via the EuCon high-speed Ethernet protocol. Apple's Logic, Steinberg's Nuendo and Cubase, and Cakewalk's SONAR, now fully support EuCon, with EuCon support coming for Apogee's Maestro and MOTU's Digital Performer. In 2008, Euphonix introduced the new Artist Series controllers for the personal studio to extend the line of products down to the home studio.

System 5

System 5 is a complete digital audio mixing system comprising a control surface, DSP Core, converters, and full monitor matrix that can be found in the world's top TV post and film dubbing theatres, as well as in music studios. It features extensive automation capabilities, eight knobs per channel, high-resolution screens, monitor matrix panel, and PatchNet routing system. EuCon Hybrid option adds external DAW control via high-speed Ethernet to any System 5.

S5 Fusion

This new packaged System 5 is a solution aimed at HD TV post and music applications and comes with 24 faders and full surrounds monitoring at an affordable package price.

MC Pro

The MC Pro is a professional Ethernet controller for Mac and PC workstations aimed at speeding up operation with any application. Using the high-speed EuCon control protocol it connects with all industry leading DAWs to include fader, knob and jog/shuttle control, touch-screen as well as providing 65 programmable LCD SmartSwitches for fast access to the commands you use the most.

System 5-MC

Adding the 408T fader modules and a frame to the MC Pro turns it into a System 5-MC integrated DAW mixing controller designed for recording, editing, and mixing with your favourite DAW. As it includes the MC it has all the cool control features and access to multiple workstations as the MC. Multiple operator systems are available for film dubbing applications.

Euphonix
digital emotion

CONTACT DETAILS

Sales

Euphonix has direct sales offices in Los Angeles, New York, Tokyo, and London. A wide distributor network handles sales in many regions throughout the world.

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Fairlight Consoles

Fairlight consoles are chosen by the world's leading post-production, broadcast, and music clients for their productivity, capabilities, sonic excellence, and value for money.

Fairlight's console range features Constellation and Anthem, which are joined this year by the new Xynergi Media Production Centre. All systems integrate recording, editing, and mixing, and combine a highly evolved tactile control surface with the awesome power of the breakthrough CC-1 FPGA digital processing technology.

Fairlight consoles deliver unrivalled price/performance advantages by including all aspects of full audio for video production in their design. Every console system features eight bands of EQ, and three stages of dynamics on every one of its 230 channels, as well as 192 track recording, full editing, 7.1 surround mixing, full monitoring, dynamic automation of over 70,000 parameters, advanced fader management, machine control, an integral routing and patching matrix, and flexible I/O options. To complement the array of audio production tools, Fairlight consoles integrate a digital video player/recorder.

Overall, Fairlight's consoles are the benchmark for professional HD audio production in terms of both price and performance.

Xynergi Media Production Centre

The Xynergi MPC is a desktop production system that organises and delivers all the media processing tools needed for high-end audio for video production in all widely used surround formats. The system is based around a completely new concept in tactile control, harnessing the awesome 'green' processing power of Fairlight's CC-1 digital media engine.

Xynergi delivers a revolutionary new control paradigm and breakthrough in ergonomic flexibility. Featuring Fairlight's new self-labelling key switch technology; the Xynergi controller delivers a new standard for ease of use and operational speed, and at the same time dramatically lowers the learning curve from system set-up to full production.

Fairlight Constellation

Fully Featured System

The Constellation is a large format recording, editing and mixing system handling high throughput commercials, TV production, and film projects with ease. The comprehensive bussing system allows simultaneous generation of multiple surround formats, plus bus to bus mixing for multi-stem work.

The console features an incredibly powerful monitoring system which is completely configurable with programmable fold-down and fold-up modes, allowing instantaneous switching between multiple alternative speaker sets, audio sources (both internal and external), and formats. In addition Constellation's comprehensive automation system provides complete control over every parameter of every on-board function, including processing, routing and third-party Plug-Ins.

Extensive Facilities

Constellation is available in various chassis sizes, each of which may be configured with a choice of Faders, Channel Panels, and Meter Bridges. Constellation's extended control surface features motorised touch-sensitive rotary controls and faders throughout.

Over 212 physical I/Os are supported in Analogue, AES, and MADI formats, and a sophisticated internal patching system allows totally free routing of Inputs, Outputs, and Busses to external or internal destinations.

Fairlight Anthem

Fairlight's Anthem is a fully featured digital audio recording, editing, and mixing console with high-end automation and processing that provides the user with a suite of

Headquartered in Sydney, Australia, Fairlight designs and manufactures media production systems powered by the company's groundbreaking CC-1 FPGA digital processing engine. The Fairlight product range includes Constellation, Xynergi, Anthem, and Pyxis, all of which feature in the world's leading broadcasters, commercial post facilities, music studios, and film production studios. Fairlight has a rich tradition of innovation and development, and is at the forefront of green computing technology.

CC-1 Engine

Fairlight's revolutionary Crystal Core technology delivers the World's first FPGA-based multi-media engine. By utilising these newly available technologies, Fairlight has proven that there are massive savings in terms of power consumption, heat generated, and component costs. In this respect the CC-1 engine becomes the first media-processing engine specifically architected to be environmentally responsible.

The CC-1 engine is the platform for all Fairlight console systems and consists of a PCIe card installed in any compliant host PC operating Windows XP, and an SX-20 1u rack mounting sync and audio I/O toolbox.

No other PC-hosted system provides the power and dedicated performance of the CC-1 engine, which is delivered with virtually zero latency.

CC-1 delivers the following features:

- Over 200 channels, each with Mastering-Quality EQ and Dynamics
- Less than 0.5mS latency with full processing
- Lightning fast tactile response
- Integrated 192 track disk recorder/ editor
- HD and SD video track with editing capabilities
- Wide choice of I/Os via analogue, digital, and MADI
- Hardware accelerated VST and Rewire support
- Comprehensive multi-format mixing capabilities
- Automation of over 70,000 parameters including plug-ins
- Comprehensive integrated monitoring matrix
- Wide choice of tactile editing and mixing surfaces
- Full support for collaborative workflow tools

What can be achieved with just ONE CC-1 card ?

- 230 Super Hi Resolution Audio Channels
- Eight fully parametric bands of EQ on EVERY channel
- Three stages of Dynamics on EVERY channel
- 72 user definable mix busses from Mono to 7.1
- 64 channel audio bridge to VST plug-ins
- ReWire connection to sound design tools
- Up to 220 physical I/Os per CC-1 card, analogue, digital, or MADI
- Integrated video track in SD or HD format
- Integrated 192 track disk recorder and editor
- Comprehensive disk recording and editing
- File support for OMF2, AAF, MXF, AES31, BWAV, AIFF, AVI, XML, QuickTime, Mpeg, and many more

familiar operational modes found in many popular high-end music and post consoles. It is aimed at audio facilities that wish to diversify and attract both music and post-production style work. Anthem provides a console designed specifically for both applications with each 'mode' being instantly reconfigurable. The result is a system capable of increasing the number of potential business opportunities available to the studio and a new level of flexibility in the studio environment.

USA - Fairlight US
www.fairlightus.com

UK-Tekcare
www.tekcare.co.uk

France - EuroMedia Technologies
www.euromedia-technologies.com/

Fairlight's Company Culture And Philosophy

Fairlight is about creation, innovation and invention, but with a twist of commercial common sense. Our culture is similar to that of our customers – unbridled commitment to creative excellence with a close eye on the bottom line.

We pride ourselves on listening to our customers and always trying to meet new challenges, certainly delivering tools that meet the price/ performance demands of our clients is a major factor. The introduction of the CC-1 demonstrates our ability to innovate in a technology-driven market and deliver the tools required to keep our clients ahead of the game.

Our vast experience in audio for video gives us a leading position in the convergence of these platforms, and in doing so, we will be able to provide a tangible commercial and creative advantage to our user base around the world.

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mc²90 – No compromises

Lawo specialises in the manufacture of digital mixing consoles and routing systems for radio and TV broadcasters and for the live domain. High quality standards and innovative technology are supported by over 35 years' experience in the field of professional audio technology.

A New Reference For High-End Mixing Consoles: The mc²90

Size and power, flexibility and dependability, an intuitive control surface and ergonomic design – the mc²90 sets new standards in all these areas.

Optimum Control Thanks To Maximum Flexibility

The mc²90 offers a modular central control section that enables you to position the most significant modules exactly where you want them, so that you may access them more easily. In addition, external control devices can be integrated smoothly into the mc²90 control surface – from up to 5U in the clever integration of a 19-inch rack to Danner modules that can be fitted in the meterbridge as well as on the control surface.

Be On The Safe Side

With the mc²90 we have reached a new level in the redundancy structure: the Lawo-developed "Dual Star Technology" has now found its way into mixing console design. With this dual star technology within the control surface, Lawo has established a further milestone in reliability and redundancy, and sets new standards in the design of mixing consoles and HD cores.

Form Follows Function

Intelligent use of colour and style, and the open design of all the audio modules, gives the user a fantastic overview, even in critical live situations. Thanks to their clever visual design, EQs and dynamics in the centre section can be distinguished from one another at one glance, and designations on the individual audio modules are almost superfluous.

mc²66 – Inspired By Your Needs

Due to its lightweight construction, low power consumption and compact dimensions, the mc²66 is ideally suited for OB vans, studios, broadcast and live / theatre applications. The core with 8192 mono channels offers 512 DSP channels. With its comfortable sequence automation the mc²66 is well prepared for theatre applications. Further features of the mc²66 are the straightforward matrix and console configuration, advanced audio-follows-video with 128 events as well as a completely new designed dynamic automation for live and post-production use. Selected features are:

The brand new **Surround Channel** allows for control of multi-channel signals up to 7.1 on a single fader. For the sound engineer, this greatly facilitates the handling of multi-channel sources. In combination with with hyperpanning, the treatment of surround signals is brought to a new dimension: **Hyperpanning** allows the completely free but still easy positioning of mono, stereo, or various surround signals within a surround field. The new surround enhancement will be available from 2008.

The mc² series provides the possibility of full integration of VST

Lawo AG

Lawo develops and builds digital audio mixing consoles for radio, broadcast, production, and live applications together with the necessary software. Lawo also builds matrix systems and audio networks, carries out project engineering and acts as main contractor for radio OB vans.

In constant communication with our clients, we optimise our products' ergonomic design, functionality, and design. Throughout its history, the company has always kept learning and looking ahead, making it a pioneer in digitising radio and TV.

After the first analogue consoles, Lawo developed the hybrid PTR, analogue signal processing with digital control. Milestones of the '90s were the development of the fully digital mc series, the takeover and relaunch of the diamond console and the presentation of the mc² series. The latest developed products in this series are the mc²66 console ideally suited for OB vans and the new flagship, the mc²90 console with full redundancy, decentralised central operation and extreme surface modularity. The zirkon console series combines a configurable console surface with comprehensive functionality and easy operation. Over the years, Lawo has developed a range of routing systems, including the Nova17 and the Nova73 HD for applications of almost any size as well as solutions for networked systems.

plug ins into the desk. Common VST plug ins are hosted on an external PC, the **Lawo Plug in Server**, and are available as mixing console functions. Working with a very low latency of only 6ms, the Plug in Server makes the use of plug ins potential for live applications. The main benefit is the store and recall of all plug in parameters with the mc² snapshot.

mc²56 – Performance: Pure And Simple

The Lawo mc²56 console concentrates on essentials: it provides full mc² performance in a reduced surface with compact dimensions.

Based on the existing mc² technology, the mc²56 offers the Lawo HD core with up to 512 DSP channels, 144 summing busses, and a routing capacity of up to 8,192 crosspoints. The complete functionality of the mc² series is available – including the transfer of snapshots within the mc² family, dynamic automation, and networking with other Lawo products.

The innovative element of the mc²56 lies in the newly designed control surface that offers direct access to essential operating elements. Functions that are rarely used are handled via the touchscreen graphical user interface. This allows easy operation and a short learning curve. In addition, the new construction reduces fader width to 30mm, which allows efficient and economic working. Every 16-fader bay offers fully featured metering on high resolution TFT.

Nevertheless, Lawo continues to offer modularity with options for a second fader row and the insertion of PPMs. With different frame sizes, from 32 to 80 faders, and special flightcase versions, the console may be adapted to a wide range of applications.

The Nova73 HD high capacity audio matrix.

Zirkon Radio On-Air Console / ZirkonXL Broadcast Console

The zirkon series especially excels by its workflow-adaptive surface which is freely configurable due to the requirements of the users. The modular design allows consoles with up to 40 faders, supporting multi-layer operation, interaction with radio automation systems as well as remote-control possibilities for hard-disk recording systems. Both the zirkon on-air and the zirkonXL broadcast console support the visualisation software "Vistool" for touch-screen operation. And the zirkon mixing console offers further attractive features including surround operation (5.1+2), direct-outs as well as the possible use of a Nova73 as external, remote-controlled matrix – whenever the 384 in/outs are not sufficient.

Besides, the zirkon series shows one of its fundamental strengths with its IP-based integration – networking together whole radio stations, including resource sharing and multiple studio operation.

Nova73 HD Routing System

The Nova73 D is our high-capacity audio matrix, designed for mission-critical signal transmission. It offers up to 8192 in- and outputs in a single core, with MADI, ATM, and AES3 interfaces directly available at the central frame. Further interfacing possibilities are supplied by the proven DALLIS interface system which is used to integrate further formats and to realise decentralised, fibre-optic linked infrastructures.

The zirkon series with workflow-adaptive surface.

Hot-plugging and online configuration allow you to service, reconfigure and extend the system during operation even when you are on-air. Further features are 96kHz, Dolby-E compatibility and signal processing from simple gain adjustment to comprehensive processing like equalizer and limiter.

The Nova73 HD is based on Lawo's STAR² technology with an internal dual star architecture, supporting comprehensive redundancy options for almost every active component. Besides the use as stand-alone device, the Nova73 HD can also be employed in local as well as wide area networking applications with several cores – even in our unique Dual Star topology, the benchmark for highly available routing systems.

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Midas XL8 Control Centre Design Concept:

Midas has been designing and manufacturing live performance mixing consoles for the world's most demanding sound engineers, performers and production rental companies since the early 1970s. Still leading the way with it's analogue line, it now has a new digital big-hitter –The XL8

The work surface, the human interface for audio mixing, with its look and feel is crucial for the success of a great mix. At Midas we studied the way that people operated analogue consoles and were able to identify the important aspects of the control process and documented these as a set of rules. We then developed our digital control centre so that it conformed to these rules. This helped to maintain a traditional look and feel but without resorting to a direct copy of analogue console controls, which for an XL8 sized console would be ridiculously clumsy and expensive.

For example: most users do not read control labels on analogue consoles. Instead they instinctively know where things will be from previous experience ie. the users' inherent Muscle Memory™. Most consoles have the mic gain at the top of the channels (either side of the master section) so that is where the user would look; faders are always at the bottom, etc. Thus the XL8 control centre follows these norms for control placement.

Similarly, at a more detailed level, users would confirm control functions by shape recognition. Parametric EQ sections are normally recognisable by the fact that there are three controls most often presented in triangles, auxes are normally instantly recognisable because they are presented in straight lines, for example. XL8 picks up on this and accentuates shape recognition via control placement in carefully designed and ergonomic shaped clusters.

Colours are also used on analogue consoles, coloured tape is often applied by users to augment this, which helps with channel recognition. Thus when looking for the sax channel the engineer looks for the coloured tape associated with the horns and then only has to remember the position of the sax within those three or four instruments, ignoring the remaining 40 or more channels. In fact the colour coding of input channels has been developed even further on the XL8, resulting in the console's unique "VCA centric" channel selection method. Every fader on the surface has an electronic write-on strip that can be colour coded. The drum VCA colour can be applied to all channels used for the kit; the horn VCA colour can be applied to all of the horn channels, etc, the choice of VCA colour being down to personal preference. The navigation of inputs to the control centre can now be done through the 12 VCAs. Simply pressing the electronic write on strip for the drum VCA will bring all the drums to the input channels immediately to the left of the VCA section. It's a bit like looking (or walking) down a traditional analogue console except in reverse; now the user can stay in one place and bring the channels to them. This no longer involves remembering which layer instruments are on – as is typical for other digital consoles - because they are now associated with a VCA, the very heart of the creative mixing process. If there is ever any doubt as to which inputs are on the surface at any time,

Company History

Midas has been designing and manufacturing live performance mixing consoles for the world's most demanding sound engineers, performers and production rental companies since the early 1970s.

The evolution of Midas consoles throughout the history of this classic marque has always paralleled, and often led, increasingly sophisticated audio innovations for the worldwide entertainment technology industry. Raising the standards of sonic quality through continual research and development has always been _ and still remains _ our overall aim.

Equally important to us is the design and implementation of many new areas of control functionality and user-friendly desk operation to anticipate and accommodate the rapidly changing and expanding needs of audio professionals who specify Midas consoles for their major tours, festivals, international events, broadcast projects and prestigious fixed installations.

The Midas XL8
–A complete digital mixing system.

the bold array of colour immediately confirms which ones are present. In addition to the VCAs there are eight further POPulation groups, complete with electronic coloured write-on strip, that can be used to bring any combination of inputs to the surface as defined by the user. This provides a focus for the console that is centred around mixing on the VCAs rather than paging in layers.

In order to provide as much information and control position feedback as possible the XL8 control centre incorporates five large and genuinely daylight visible TFT displays. These are mounted just below the user's line of sight to the stage and support extremely high-resolution graphics (GUI). During development it became obvious that these were extremely useful and could be applied to help tidy up the sound engineers' working environment. Most FOH positions these days are littered with laptops and other screens providing essential communications and information not directly associated with the sound-mixing console. If we allowed external access to the XL8 screens most of these functions could be undertaken by the control centre on an as-needed basis. Thus every XL8 screen now has front panel-switchable external video input capability and the centre bay also incorporates three-way KVM (keyboard, video, mouse) switching to control external computers and the like. The XL8 control centre is named to reflect this capability because it can be utilised as a central control point for every aspect of the show, not just the audio console functions.

Of course the audio quality is exceptional. The XL8 actually improves upon the performance of analogue consoles. Being built around the very latest high speed networking technology with no single point of failure the XL8 conforms to all the classic Midas brand values of sound quality, reliably and longevity.

MIDAS PRODUCT LINE SUMMARY

In addition to the XL8, Midas is renowned for designing and manufacturing some of the World's finest analogue audio mixing consoles. These include the touring industry's favourite console the Heritage 3000, which is equally at home at Front of House or at Monitors and its sister consoles the 40 aux send Heritage 4000 and the dedicated Front of House console the Heritage 2000. The compact Heritage 1000 with its sophisticated automation, expandable matrix, modular frame and PC-based Library Manager Software is carving itself a niche in the market with venues with limited space. The semi-modular Legend 3000 is the unique multi-application console. Each input channel provides independent FOH and Monitor controls with dedicated EQ and faders, a first in the live sound industry. Siena brings all of Midas' knowledge and experience in building dual-purpose consoles to a compact package. Siena has been designed to both compliment and expand the groundbreaking Verona concept, which brought Midas quality in a desk that revolutionised the 8-buss market. Midas' first truly compact console the Venice is a common sight in applications from conference venues to concert touring.

Midas' rack-mounted XL88, a line level 8 x 8 matrix mixer greatly expands the capabilities of any mixing console to give eight fully independent sound balances from eight pre-mixed group outputs from the main console. Finally the 1U XL42 dual channel creative equaliser incorporates the legendary XL4 four-band parametric equalisation with XL4 mic/line pre-amplifiers and 48V phantom supply. Ideal for any applications requiring a high-quality front end.

Midas XL8 System Description:

The XL8 live performance system consists of a control centre and a number of 19-inch rack modules, which are inter-connected by a networked data system. The network carries both proprietary control data and open architecture AES50 digital audio and uses readily available standard CAT5, CAT6 and fibre optic cabling and connectors.
This "system" approach means the XL8 is not only a mixing console, but also a complete analogue and digital audio control and distribution system. The control centre is a typical robust Midas steel frame, which is loaded with five "bays" each of which is a discrete hardware module. Each bay can operate independently of its neighbour and incorporates its own power supply, surface modules, surface processor, GUI processor and screen. The GUI processor and the surface processor for each bay are separately connected to the network on duplicated Ethernet links. Dual-redundant master control processors and dual-redundant high-speed network routers are also housed in the control centre. Remote rack units consist of DL431 active input splitters, DL451 modular I/O boxes, DL461 dual-redundant high-speed network routers and N+1 redundant DL471 modular DSP engines.

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A Very Intelligent Controller From The Designers Of The Smart Console

A combination of features, technology, ergonomics, quality and price, that will blow your mind but not your budget.

Smart AV has combined their patented ARC Technology with a huge 22" touch wide-screen to produce the most versatile and intuitive workstation controller yet.

With super fast Ethernet control of Pyramix, Logic 8, and Nuendo 4 (PC or Mac), Tango offers music and post production features not available on any thing else. Interfaces with other workstations will follow later in 2008.

Tango
Dedicated Controls

Each of the eight channel strips features dedicated controls, with high quality, well laid out components that engineers love to use. Each of the eight channels has a dedicated HOLD button, 100mm Touch Sensitive Motorised Fader, Inject Touch Point, Mute Button, Solo Touch Point, and Touch Sensitive Encoder (24 DPI with Detents and a Push Button).

Each channel strip extends in to an in-line touch surface of virtual controls each dedicated to the task at hand.

The Console has a built-in Mouse Pad for Workstation control, above which lie dedicated Transport and Locator buttons, a Jogger Wheel with Modifier Buttons, and dedicated Cursor and Selection buttons.

Parameters such as plug-ins are automatically assigned to the 16 Touch Sensitive Encoders (24 DPI with Detents and a Push Button), to the right of the screen. These are tied to the screen graphics for intuitive control and easy access.

As well as these 16 encoders, the Active Controls, consisting of a High Resolution Smooth Feel Encoder, Active Button, and Touch Sensitive Motorised Pot, can be assigned to any parameter with a simple touch of the screen.

The Smart Console Expert Panel is retained on the left of the console, with dedicated Automation and ARC modifier controls, as well as Grouping, Ergonomic Spread, Solo, and Monitoring controls.

Examples of configurable screen displays

Virtual keyboard for rapid text entry.

High resolution graphical representation for in-line mixer controls.

An editor featuring user programmable virtual keys for super fast control of all editing functions.

Virtual (Touch screen) Controls

The Touch Screen Layout is User Definable, and can recall many layouts instantly. For example, screen layouts for general mixing, ADR recording, sound effects spotting, music composition, etc, can be set-up and recalled with a single touch of the dedicated screen menus on the left most edge of the screen.
The action of recall, can itself also trigger a workstation Screen Set Recall, so that not only the console reconfigures itself, but your workstation screens do as well!

The screen graphics are modular, so that any parameter can be assigned any representation type (bar graphs, sliders, buttons, knobs, etc). There are also dedicated displays for EQ graphs, dynamics graphs, surround panning and other unique controls. Smart AV will be updating the library of icons and controls periodically, and we are planning to make the graphics editable by the users for total customisation.

Additional programmable editing functions, as well as a virtual keyboard for naming and other text entry, can be brought up instantly on the 22" touch screen with a single user touch.

Connection to the workstation is via a single 100MBit Ethernet (CAT5) cable.

The physical ARC has been replaced by MonARC, a scrolling screen-based channel overview display, coupled with the touch screen selection of channels for control of up to 240 channels using the patented ARC Technology methodology. The MonARC display can be configured over multiple touch screens when the extn bay is fitted, or alternatively it can overlay workstation displays and picture displays.

The MonARC system provides a comprehensive meter bridge with indicators for EQ, Aux Sends, Solo, Mute, Automation, and Faders, as well as Channel Metering or Group Metering for Surround. Group Metering is up to 12 channels, and the components of the group can be displayed at a touch.

Virtual MonARC display from top of touchscreen.

Extension Bay

For those who need more faders a 12-fader interlocked extension bay becomes available in September 2008. This is fully integrated with the main console, and the second touch screen can be operated in line with the main console, or set to display a second screen such as editing. There are also 16 user definable macro keys.

Prices

Tango console £3,790.00
Tango 12 fader extn. £3,290.00

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Solid State Logic

If you have this guide in your hands you probably need no introduction to SSL, but just in case you missed it...

For three decades SSL has pioneered, designed, and refined what are, without question, some of the finest mixing consoles money can buy. Legendary analogue giants like the E, G, J, & K Series have been part of an evolution that finds the SSL of today a complete range of large, medium, and small scale analogue music consoles with Duality, AWS 900+, Matrix, and X-Rack... and an equally complete range of highly evolved digital broadcast, post, and music consoles with the C-Series.

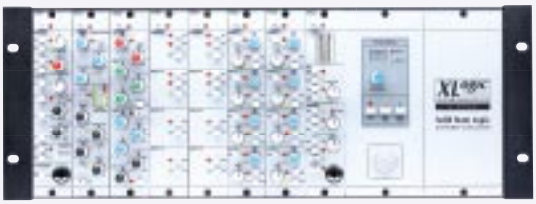
Matrix – SSL At The Heart Of Your Studio

The most recent step in the evolutionary process is Matrix, a compact SuperAnalogue™ 16-channel, 40-input mixing console with inbuilt software controlled SuperAnalogue signal router and multi-layer digital workstation control. In use it's simply the most elegant way to be creative with your entire arsenal of analogue outboard and cutting-edge digital equipment.

Designed to be at the heart of your everyday creative process, Matrix brings together a unique combination of SSL mixing console (with 40 input summing, aux sends, outstanding monitor, foldback facilities, and 100mm motorised faders), with a software controlled analogue routing matrix (that enables any of up to 16 analogue outboard processors to be inserted in chains on any input channel) and an Ethernet connected DAW control environment that puts your entire networked recording environment at your fingertips.

X-Rack – Build Your Own SSL...

X-Rack brings the SSL sound to the project studio with a simple plug and go modular system based upon a framework 19-inch rack unit with integral power supply and Total Recall® capability. By selecting from a range of modules a mixing and/or processing platform entirely suited to your own individual needs can be configured. Featuring the same SuperAnalogue processing as the XL 9000 K Series console, the X-Rack boasts eight optional modules; '4 Line' and '8 Line Input' modules provide Line Level summing inputs, the 'Master Bus' turns X-Rack into a small but perfectly formed console that sums the rest of the rack modules into either of two stereo mix busses and provides metering and multiple monitor system outputs. 'Mic Amp' is a classic SuperAnalogue mic amp, 'VHD Input' offers VHD and LMC1 in a single module, Channel EQ delivers twin E & G EQ curves, 'Dynamics' incorporates compression, limiting, expansion, and gating.



AWS 900+ – Digital Control For Analogue Souls

Establishing a new category in modern console design, AWS 900+ is a medium format music console that has become the choice of leading international artists, producers, and engineers. It delivers all of the legendary benefits of a Solid State Logic analogue audio console; ultra clean SuperAnalogue™ mic pre's, the precision and unique character of our dual curve 4-band parametric analogue EQ, SSL Dynamics processing, full 5.1 mixing and monitoring, motorised fader mix AWSomation, TotalRecall™ of analogue console controls, integration of analogue audio sources, and the facility to inject some depth into your digital audio by summing your mix on the finest quality analogue mix bus. AWS 900+ takes control of the modern Digital Audio Workstation driven studio. The highly-evolved hardware control surface enables the operator to manipulate both analogue audio paths within the console and the digital audio paths within the DAW from the heart of the console. With dedicated DAW transport and track navigation, multi-function encoders, VCA or motorised fader modes, routing control and built-in TFT display for advanced plug-in editing, AWS 900+ delivers streamlined hardware control over your entire studio environment.

Duality – The Analogue Console For The Digital Age

Duality is a large format music console that offers a wealth of creative and sonic options, and it has become the

Duality at Germano Studios NYC.

first choice for serious commercial recording facilities worldwide. In addition to a SuperAnalogue® mic amp, each channel features a 'Variable Harmonic Drive®' input stage designed to add analogue character to clinical workstation outputs. By introducing controlled distortion of either second or third harmonic, VHD™ provides variable valve-type warmth or harder transistor-type distortion that is like a time machine of distortion characteristics. A unique split channel path surpasses the in-line format by enabling channel processing to be assigned to the input or monitor path of the workstation within each console channel... in use it is just like being able to patch your analogue channel processing into your DAW mixer. There is legendary SSL EQ with both E and G series equalizers, and classic SSL dynamics with peak sensing or RMS/over-easy compression to choose from. Duality offers VCA style or moving fader automation and complete control over DAW parameters from the console surface. There is a versatile and completely integrated plug-in selection and control section with inset TFT display and soft key system.

C200 HD at Livewire.

The comprehensive routing system is controlled via a versatile central routing tile, and delivers multiple stereo busses or multiple 5.1 stems to make best use of a full set of 5.1 position controls on each channel. Duality features a familiar control surface and adds TFT displays across all channels to provide comprehensive visual feedback on signal levels, channel settings, system configuration, and routing to deliver highly efficient multi operator Total Recall™.

C-Series Digital Audio Consoles

SSL C-Series consoles bring the SSL analogue ethos to the digital domain. All SSL digital console products are renowned for the very highest quality A/D D/A conversion, and EQ and Signal Processing based on algorithms developed to be what they are; digital processors which sound as fantastic as analogue SSL hardware... not as emulations of analogue systems.

The C100 HD Range is a family of robust digital broadcast consoles designed for on-air and live-to-tape production applications. Both the console operation and underlying technology have been designed for freelance-friendly, reliable operation. Uncluttered control surfaces conceal enormous power and flexibility including advanced 5.1 capabilities that enable 5.1 channel groups to be folded together for single fader control. SSL's MORSE system allows multiple C-Series consoles to share resources, to give ultimate flexibility in larger installations.

The C200 HD provides a digital console adaptation of SSL's popular in-line console heritage with a dedicated 'knob per function' control surface. The C200 HD is suitable for creative mixing applications, such as Music or Entertainment, where 'hands on' access to a large number of controls is essential, and the benefits of instant and complete parameter recall is also a key factor. In-line versatility and the provision of both Snapshot and Dynamic automation make the console ideal for both live-to-air and post production mixing applications. A special 'Mobile' configuration is also available for compact studio or mobile installations.

The C300 HD is a fully configurable, multi-format stem-based mixing console. In today's world of multi-format music production, where surround music mixes are under increasing demand, C300 HD is the perfect nerve centre for commercial music and post facilities. It combines the unrivalled audio fidelity and processing of an SSL digital audio console with 500 mix inputs, 80 mix busses, comprehensive multi-format monitoring, multi-system machine control, and highly evolved hands-on control of both the console and multiple DAWs. With comprehensive visual feedback via TFT channel displays, large tilt adjustable central touch screen, assignable V-Pots and motorised faders, and assignable hardware master tiles, C300 HD offers unrivalled control of the modern studio environment.

C100 HD at WHDH.

Solid State Logic
SOUND | | VISION

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A Full Range Of Mixing Consoles

There's probably no other manufacturer that serves the number of markets covered by the mixers from The Soundcraft Studer Group. From small band PA mixing and home recording to the largest live concert, from small self-op radio to the world's leading broadcasters, from bedroom DJs to big nightclubs – there's a mixer for every application.

Digital being the technology of today, the Soundcraft Studer Group is well placed, thanks to the proven and reliable digital technology developed by Studer, and now realised in products such as the Studer Vista™ 8 and Vista™ 5 Production desks, the OnAir™ 3000 Radio desk, the Studer Vista 5™ SR, and Soundcraft Vi6™ and Vi4™ Live Consoles.

Vistonics™, Studer's legendary graphical user interface, is the basis for the Vista series and the Soundcraft Vi6 (with Vistonics™ II), proving that digital can be as easy to use as analogue.

And while digital is very much the future, Soundcraft has recently added to its portfolio of analogue consoles for a wide market.

Studer Vista 5 SR

Continuing the successes of the Vista 5, 6, 7, and 8 in the broadcast and fixed install markets, Studer now brings this failsafe and intuitive technology to the tour sound market.

Most obviously a steeper angle of the Vistonics™ screens has been introduced. This provides a more direct viewing angle when operating in a standing position particularly in daylight.

Furthermore, console illumination being integrated into the desk and ultra bright LED buttons means the console can be operated equally well in dark as well as bright environments.

A total of up to 240 channels can be accessed from the desk and laid out in any order, with the Vistonics system giving instant control over all related channel functions. DSP power and I/O are specified by the customer. The total I/O capacity, comprising various cards including Mic/Line, ADAT, TDIF, AES/EBU, SDI and MADI, may exceed 1700 inputs and outputs.

Studer Vista 8

The Vista 8 provides powerful broadcast features with dynamic automation to offer a highly sophisticated and flexible multi-purpose live broadcast desk.

A sophisticated snapshot system and dedicated mute groups also make this the perfect choice for fixed install live applications such as concert halls and theatres.

Operational simplicity is the result of the patented Vistonics system.

Channel controls on the Studer Vista 8 consist of a TFT screen with buttons and rotary controls mounted on it with a touch-screen area immediately below. Other channel specific controls such as the fader, mute, on/off buttons, etc, are arranged above and below the screen to provide an instant and perfect overview, rapid familiarisation, and confident operation.

The new SCore Live DSP engine offers high-power DSP in a very small frame, and coupled with expandable D21m I/O can offer a vast number of inputs and outputs.

Catering for today's transition to Digital Broadcast, the Studer Vista range can easily manage 5.1 input sources, surround monitoring, stereo down-mixing, SDI, and Dolby® E decoding and multiple audio source formats.

Soundcraft Vi Series Digital Live Sound Consoles

The Soundcraft Vi6™ and Vi4™ consoles have been designed using the proven reliability of Studer's Vista™ and On-Air 3000™ series of consoles, and, more importantly perhaps, uses a Vistonics™ II user interface (a derivation of Studer's Vistonics™) to allow the engineer to operate the desk intuitively. Vistonics II uses the same type of touch-screen colour TFT monitor with integral rotary controls and switches mounted on the glass to provide a 'where you look is where you control' user interface.

The Soundcraft Vi6 console has an input-to-mix capacity of 64 channels, mapped out on two layers under the control of 32 faders, which are of course motorised. These can be assigned to 32 outputs (plus a stereo and mono mix), which can be any combination of group and aux busses. Up to 16 Matrix Outputs can be configured from the pool of 32 busses. The Soundcraft Vi4 has 48 inputs on 24 faders, with 24 outputs.

Adjustment of EQ, aux levels, routing or dynamics all takes place in-line with the channel, and colour-coded sections are enhanced by the patented Soundcraft FaderGlow™ system.

Soundcraft FaderGlow uses a multi-colour LED with a unique diffuser alongside the fader track to indicate which function is currently active on the fader.

Offline editing is provided by Soundcraft's Virtual Vi software for PC, and the console software includes functions for Copy and Paste, linking and parameter libraries for fast and easy setup.

Soundcraft GB2R

This 19" rack-mountable mixer is designed specifically for smaller installations in churches and performance venues, or for small portable PA systems. It will also find friends in Broadcast where its high quality and feature set will be very appealing.

Available in two variants, the GB2R offers either 16 mono inputs to a stereo mix output, or a 12.2 version with 12 mono inputs, two full-feature stereo inputs and two group busses, each model having six auxiliary sends.

The Soundcraft GB2R inherits both the GB30 Mic preamplifier and GB30 Equaliser designs from the GB4 and GB8.

More Consoles From Soundcraft

Soundcraft also offers a wide range of multi-purpose analogue consoles from the new Lexicon-equipped multi-purpose range of EFX, MFX, and FX16ii mixers, through the GB Series medium format live desks up to the large format MH2, MH3, and MH4 live consoles, plus the Compact mini desktop recording mixer and the range of Broadcast consoles such as the Series 10, Series 15, and BB100.

Studer OnAir 3000 Radio Production/On Air Console

The OnAir 3000 is available in a completely modular or fixed frame desk using the SCore DSP engine. The fader module includes six fader strips, and up to eight fader modules may be fitted, giving a maximum console size of 48 faders. Layout options range from a highly comprehensive engineer-operated continuity console to a single fader panel for DJ and newsroom use, or even a PC-operated system with no physical desk controls.

The console has three main stereo mix busses plus an audition facility, four stereo aux busses, 16 mix-minus sends, configurable as auxes, and three independent studio monitoring circuits and offers full dynamics, EQ and input/output routing in each channel.

The OnAir™ 3000Net, an option for the OnAir 3000, offers the possibility to network several SCores. This allows not only sharing of the audio sources as if they were virtually connected to the local SCore but also of the respective controls like red light, loudspeaker dim, and cut or mic gain.

More From Studer

Studer also offers smaller OnAir consoles such as the OnAir 500 and OnAir 500 Modulo, plus the Vista 5, Vista 6 and Vista 7 Production consoles.

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Toft Audio Designs

The Toft Audio Designs ATB Series represents a quantum leap in small footprint console design. This combination of legacy circuit design and features is sure to attract both traditional analogue and modern DAW users.

The Malcolm Toft Legacy

The ATB Series is the creation of legendary console designer Malcolm Toft. Malcolm began his career as an audio engineer, working for Trident Studios from the day it opened in 1968 until 1971. During his tenure there, he assembled an impressive list of credits and worked with iconic producer Tony Visconti for three years. His recording accomplishments include: David Bowie's Space Oddity, three albums with T-Rex, and James Taylor's first release. He was also involved with mixing The Beatles anthem Hey Jude.

In 1971 he became studio manager and was given the task of finding a replacement console that would provide recording facilities for the newly emerging 24 track format. It soon became apparent to him that no current manufacturer could provide the type of facilities they required. These included full 24 track monitoring and routing, four-band equalisation, monitor equalization and ten auxiliary sends. Malcolm therefore proposed to the studio owners (Barry and Norman Sheffield) that they could design their own console to fit their demanding requirements.

In 1972 Malcolm founded Trident Audio Developments, beginning a legacy that would help shape the sound of rock and roll. The new designs quickly gained prominence in a rapidly expanding recording market. Trident Audio Developments produced a number of acclaimed models, with several models including the Series 80, Series 90, and A-Range, earning high accolades. Many of these consoles are still in use today.

Artists who have recorded hits on Trident consoles include; Stevie Wonder, Herbie Hancock, Rod Stewart, Queen, and David Bowie. Recently, Dire Straits, Coldplay, Radiohead, and Oasis have added their names to the roster. In fact, Radiohead recorded every release from OK Computer onward on an MTA Console (also designed by Malcolm Toft).

The Console

The ATB Series continues to build on the Toft legacy, incorporating a great deal of the original circuitry utilized in popular Trident/MTA models; however it is designed with today's DAW user in mind.

Available in 16, 24, and 32 channel configurations, the ATB features in-line monitoring and direct outputs on each input channel, thus facilitating both tracking and remixing with consummate ease. Inline monitoring, additional master section inputs, and dedicated stereo effects return allow up to 92 channels of input when mixing (ATB32).

Input Section

Each input features a high quality Burr Brown mic/line pre-amplifier, and will accept signals from low impedance balanced microphones, high or low level balanced/unbalanced line levels, or even the output from a musical instrument. Signal present (-20dB) and peak (+10dB) LED's provide visual references of input level. A high quality 100mm fader provides precise level control.

The signal can be shaped via the extremely musical four-band equalizer, the design of which draws heavily from the original Trident Series 80. Boost and cut of 15dB is provided by centre detent controls and the two sweep frequency ranges overlap for increased flexibility. Direct outputs are supplied for recording to DAWs or multi-track tape recorders. Each input channel also has its own send/return should the engineer with to use external EQs or dynamics processors.

Six Auxiliary Sends allow the interface of external effects processors and supply a method for setting up cues. Aux 1 is set up pre-fade, and Auxes 2-6 can be independently switched to pre or post fader positions in the signal path.

Input modules also incorporate a monitor section, useful for listening to takes during the tracking procedure. Auxes 5 and 6 can be assigned to the monitor section, making it possible for the engineer to

The ATB input module.

Additional products from Toft Audio Designs

ATC-2 Dual Studio Channel
AFC-2 Dual EQ with Mic Pre
EC-1 Studio Channel
DC-2 Dual Compresesor

have a monitor mix complete with EQ and effects available while recording. During mixdown, the monitor inputs can function as additional line inputs, as they can feed the Left/Right outputs simultaneously with the channel input. This effectively doubles the number or inputs on the console.

A stereo after fade listen button allows channels to be monitored independently without interrupting the recording process This maintains a true stereo perspective while doing so. A pushbutton located on each module printed circuit board makes it possible to make each channel solo mono, pre-fade.

Submaster Section

Each Submaster channel provides a method of adjusting the output level of each of the 8 sub-group outputs via its own fader. Using the Subgroups it is possible to build up a monitor mix of the recorded tracks and any that are about to be recorded. Aux sends 5 and 6 are available to provide access to reverbs or other effects. This allows complete stereo cues with effects to be sent to performers. High-quality 12-segment LED bar-graph meters provide instant notification of sub-group levels.

Further enhancing capabilities are eight additional Monitor Returns in the Submaster section. While functioning as additional inputs, these returns are also connected to line inputs 1 to 8 and can be switched to either path, providing a method for adding more EQ and access to additional sends, if desired.

ATB Submaster & Master Section.

Eight stereo Effects Returns are located in the upper Submaster section, so that no regular inputs need be used as effects returns. There is also a master level control for each of the Six Auxiliary Sends for adjusting overall level to an effects processor or headphone amplifier when using for cue mixes.

Master Section

The ATB Master Section provides all of the controls needed to affect overall functionality of the console. A 100mm fader allows accurate setting Left/Right of output levels, and a visual representation of level is available via both 12-position bar graph and VU meters. A comprehensive talkback system with built-in microphone allows the engineer to communicate with performers. Two sets of Monitor Outputs are supplied, along with a headphone output with level control. Two line level two-track Returns are provided for monitoring CD players or other stereo devices.

The ATB Series' modular design allows for easy servicing should the need arise. It is constructed from individual circuit boards mounted at right angles to the front panels and removable in banks of eight. All active components are socketed (ICs, etc.) making removal simple. All passive components use traditional, through-hole technology, simplifying the servicing process.

Conclusion

The ATB Series range of console products provide an impressive balance of features and audio quality making them the perfect fit for both commercial and home studios. An extremely versatile and sophisticated design, ATB consoles offer extremely high audio quality and features never before found in a console in this price range.

ATB rear panel.

ATB Series: Key Features

High-quality Burr-Brown Pre-amplifier
6 Aux Sends
Direct Outputs for each Input
Inline monitoring
8 Subgroups
8 Stereo Effects Returns
8 additional Monitor Returns (Master Section)
Inserts for each Input, Subgroup Output, and L/R Bus
Optional Digital Card
Up to 92 Channels on mixdown (ATB32)

Toft Audio Designs®

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The Past, Present & Future of Digital Mixing

Following 20 years of experience in the design and manufacturing of digital mixing consoles, the Yamaha range is considered to be the most widely used in the world today. Their popularity has been gained through a growing reputation for high audio quality, reliability and user friendly interfaces.

For the first 15 years, the majority of the Yamaha digital mixer stable was aimed predominantly at the studio production, post, and broadcast markets. Despite this, many found there way into SR and theatre due to their feature sets, channel counts and small footprints.

In 2001, Yamaha launched the PM1D which redefined sound engineers' expectations of what a large-frame console was capable of in the live sound arena.

Since then, the family of Yamaha digital consoles has grown year on year, with every addition catering for a different niche. As with any family, there is a similarity between each sibling, enabling engineers to easily move from one Yamaha model to another without the worry of being confronted with a new UI and the associated learning curve; perfect for organisations where various jobs require different sized mixing consoles.

Connectivity

A key operational advantage of the Yamaha line up is their ability to connect with the outside world. Every Yamaha Digital Mixer has at least one I/O expansion slot in its back panel.

They can house a variety of Mini-YGDAI (Yamaha General Digital Audio Interface) cards including those from third-party manufacturers such as Auvitran, Aviom, Audio Service, Optocore and Waves.

Engineers or system designers can select from 24 different mini-YGDAI plug-in cards to create the input/output configuration that's perfect for their needs – whether you need digital I/O in ADAT, TASCAM, or AES/EBU format, Ethernet or CobraNet connectivity, extra analogue I/O capability, or other functions.

Support

The range of professional models is distributed and supported by a dedicated team of specialists known as Yamaha Commercial Audio. Not only do they play a key role in the design and specification of high-end product development, they also form a global network of technical experts who are on hand to support productions whilst on tour or working in unfamiliar territory.

LS9 Series

Incredibly compact, lightweight digital live-sound consoles with 16 or 32 recallable head amps, a built-in USB memory recorder/player, and stunning sound quality.

M7CL Series

An innovative Centralogic™ control interface makes these digital live-sound consoles as intuitive to use as analogue consoles.

PM1D & PM5D

PM5DRH

The PM1D Digital Mixing System was the first to take the acclaimed Yamaha PM-series live sound consoles into the fully digital domain. Following close in its footsteps came the PM5D and PM5D-RH which took the digital revolution to the next level. Housed in a surprisingly compact frame, the PM5D and PM5D-RH employ their custom Yamaha 'DSP7' LSI's to provide ultra-high-speed 96kHz/32-bit processing, extraordinary signal-routing control and a vast array of EQ

PM5D

and FX features. The recent launch of the Yamaha DSP5D Remote Stage Box will allow new & existing PM5D/RHs to be expanded to handle up to 168 inputs simultaneously.

The sound, power and accessibility of these PM consoles has prompted 1000s of touring companies, theatres and broadcasters to make these their digital mixers of choice.

They have repaid their owners by providing trouble free operation in some of the most demanding global events such as the recent Olympics and The World Cup.

Production Range

The Yamaha DM / 0 range consists of four consoles aimed primarily at studio and post production. They all feature 5.1 mixing & monitoring functions with an increasing amount of I/O as you go up through the range.

The new DM2000VCM is the latest DM2000 Version 2 plus a formidable array of state-of-the-art processing technologies that provide all-new production power. You now have extraordinary recreations of classic compression and EQ units from the '70s, simulations of several legendary analogue open-reel tape decks, a complete suite of unmatched REV-X reverb effects, a surround post-production package that is second to none, and even a selection of vintage stomp boxes to spice up your mixes. And all of this is right at your fingertips, with no need to patch in external processors. With HDTV being heralded as the biggest thing to happen to television since colour, the DM2000VCM with its integral 5.1 mix capability is already providing a large number of post facilities with the tools to deliver this exciting new format.

01V96 V2

DM1000V2

02R96V2

DM2000VCM

YAMAHA

CONTACT DETAILS

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(Germany, Netherlands, Belgium, Luxemburg, Switzerland, Austria, Slovenia, Hungary, Slovakia, Czech Republic, Poland, Lithuania, Latvia and Estonia.)
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Yamaha-Kemble Music UK Ltd
t: +44 (0)1908 363 404.

USA
Yamaha Commercial Audio Systems Inc
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directory of console manufacturers

audio consoles 2008

Acousta
+43 (0)662 82 46 27
www.acousta.at

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www.adt-audio.com

AEQ
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www.aeq.com

AEV
+39 051 6634711
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AKG Acoustics
+43 1 86654 0
www.akg.com

Alesis
+1 401 658 5760
www.alesis.com

Allen & Heath
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www.allen-heath.co.uk

ALTO Professional
+ 886 4 2231 3737
www.altoproaudio.com

AMS Neve
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www.ams-neve.com

APB-DynaSonics
+1 973 785 1101
www.apb-dynasonics.com

API
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ART
www.artproaudio.com

Ashly Audio
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Audio Technologies Inc
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+41 21 651 01 01
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Yamaha
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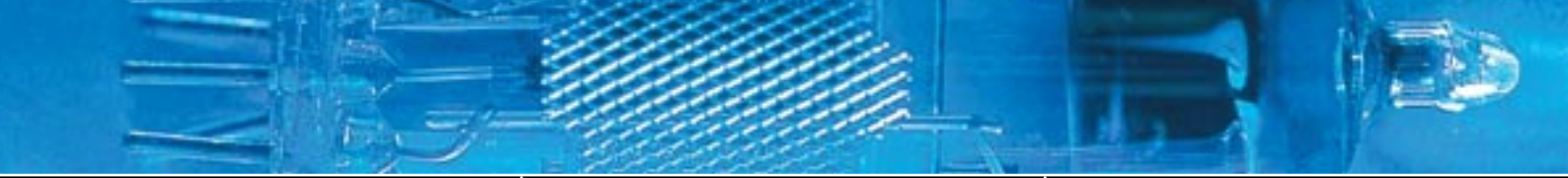

COOL : VTC
TUBE CONSOLE

- Modular in-line console
- 16 to 56 channel versions

COOL : M1
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